1964/65

LOUISIANA

STATEWIDE WILDLIFE INVESTIGATIONS

ANNUAL PROGRESS REPORT, W-29-R-12
A Pittman-Robertson Project

1964-65

LOUISIANA WILD LIFE AND FISHERIES COMMISSION
CAPITOL STATION
BATON ROUGE, LOUISIANA 70804

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STATE: Louisiana

PROJECT: W-29R-12

PERIOD: July 1, 1964-June 30, 1965

ANNUAL PROGRESS REPORT

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JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN I
DEER INVESTIGATIONS

State of Louisiana

Project No. W-29R-12 Name: State Wildlife Investigations

Job No. 2 Title: General Condition of Deer Herds

Period Covered: July 1, 1964, to June 30, 1965

ABSTRACT: Deer checking stations were operated on fifteen (15) Game Management Areas during the 1964 managed deer hunts. All physical data obtained from the deer checked at these stations have been tabulated and analyzed. These data have been compared to the data obtained during previous hunts on the respective areas. Data collected includes age, sex, weight, antler formation, fawn-adult ratios and hunter success ratios. A total of 37,375 hunters harvested 2,201 deer on Louisiana Game Management Areas during the 1964 hunting season. A brief deer aging school for all technical personnel was held prior to the opening of deer season.

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Recommendations: The most reliable deer management data that we can collect is that which is obtained from our deer checking stations. We should continue to search for ways to refine our techniques for gathering this physical data from our deer herds. The importance of recording accurate data should be stressed to all of those technical personnel involved in the collection of deer data. The annual deer aging school which is held prior to the managed deer hunts should be continued. The collection of physical condition data from deer killed on game management areas is necessary if we are to efficiently manage our deer herds. The collection of this type of data should be continued.

Objectives: It is the objective of this study to analyze the physical data from deer killed on the game management areas within the state, and to correlate the physical conditions to age classes, population densities and fawn-adult ratios.

Techniques Used: Deer checking stations were operated on all game management areas having deer seasons except Bodcau G. M. A. An effort was made to record the age, weight, sex, antler development and type of gun used, for as many deer as possible. Udders of females were checked for evidence of lactation. Simultaneous opening of all game manage-

ment areas having deer seasons created a shortage of technical personnel. This necessitated the use of many non-technical people in the operation of the deer checking stations. Biologists were assigned only to checking stations where a heavy deer kill was anticipated. Non-technical personnel did not record any data used in this report other than total number and sex of the deer coming through their stations.

All weight data is broken into three categories: Live weight, empty weight, and field dressed weight. Live weight is defined as the weight of the complete intact deer. Empty weight is considered to be the weight of the complete animal with all viscera removed. A deer with only the stomach and intestines removed was considered to be field dressed. All weight data is broken down by sex and age. The mean weight for each weight category in each age class is calculated. Mean weight were then converted to live weights by the application of generally accepted conversion factors. Mean field dressed weights were converted to live weights by multiplying by the conversion factor of 1.25. Mean empty weights were multiplied by the factor 1.33 to obtain computed live weights.

Once all three weight categories were placed in common terms, we calculated the average computed live weight for each age class. By presenting weight data in this manner we are able to make comparisons between the various management units and data categories. This method of treatment also strengthens the size of the sample.

Deer ages were grouped into three categories for the purpose of this report. In processing data from areas where "any-deer" hunts were held, ages were recorded as either 6 months, 1½ years, or 2½ years. The first two of these categories are exact ages; the latter is a composite group containing all deer of age 2½ years or older. The purpose of this type of age grouping is to increase the accuracy of our age-weight correlations. Since it is felt that many of the errors made in aging deer are made in the age groups of 2½ years and older deer, the consolidation of the age classes past the 1½ year age group would tend to minimize the effect brought about by aging errors. All previous data has veen converted to this new system of grouping for the purpose of comparison.

A deer aging school was held prior to the managed hunts. This afforded technical personnel an opportunity to familiarize themselves with aging criteria.

In cases where "bucks only" hunts were held, only the 1½ year and 2½ year age classes were used due to the fact that 6 month old male deer did not have antlers that met the legal minimum of three inches.

All Louisiana Game Management Areas, with the exception of Zemurray Park G.M.A., were opened on November 27, 1964, for the managed deer hunts. Zemurray Park was opened only on December 2, 3, and 4, 1964, for a special three day "any-deer" season. Hunters on this area were limited to 200 per day. These hunters were selected by public drawing from applications received by mail. Those hunters selected were given non-transferrable permits good for one day only. On other Game Management Areas, hunters surrendered their basic hunting license daily to permit stations in exchange for daily permits. All Game Management Areas having "any-deer" seasons, except Russell Sage, were assigned a limit guide number. When the total kill reached this number, "any-deer" hunting was stopped at the end of that day and "bucks only" hunting started on the following day, provided that the allotted open season had not run its course. In most cases the allotted open season was five (5) days, while on Fort Polk G.M.A., it was three (3) days.

This type of season allows us to come closer toward obtaining an adequate harvest on the Game Management Areas. In the special case of Russell Sage, only one day of "any-deer" hunting was scheduled with the remainder of the season being the same as adjacent areas. The adjacent area had nine (9) days of "bucks-only" hunting remaining following the "any-deer" day on Russell Sage. Fort Polk G.M.A. had a three day "any-deer" hunt and an additional "bucks only" hunt concurrent with adjacent areas. This provided an additional time of sixteen (16) days of still hunting. Bodcau G.M.A. had a season which was concurrent with outside areas also. This consisted of an early nine (9) still hunt and a nineteen (19) day hunt with dogs being allowed to run on the outside of the management area. No field data concerning deer kill and hunter success is available from this area. Bodcau G.M.A. was hunted by season permit only, Fort Polk G.M.A. and Russell Sage G.M.A. were hunted by season permit except during the designated "Any-deer" days, at which time a daily permit was required.

FINDINGS: All data collected on the managed hunts held during the 1964 deer season has been processed and is presented in tabular form. The following table gives a summary of the results of the managed hunts on some of the Game Management Areas in Louisiana and lists the data tables having pertinent data

for the respective areas.

TABLE OF HUNTER SUCCESS FOR SOME LOUISIANA GAME MANAGEMENT AREAS DURING THE 1964 DEER HUNTING SEASON

GAME MANAGEMENT AREA	NUMBER OF HUNTERS	NUMBER OF DEER KILLED	HUNTER SUCCESS RATIO	NUMBERS OF TABLES CONTAINING PERTINENT DATA
Alexander Forest	1343	142	1/9	Table I
Caldwell *	641	37	1/17	Tables I & II
Catahoula	4206	347	1/12	Tables I, III,&XII
Chicago-Mill *	9247	256	1/36	Tables I & IV
East Carroll *	375	5	1/75	Table I
Evangeline	1420	62	1/23	Tables I,V, &XII
Georgia Pacific *	6490	317	1/20	Table I
Jackson-Bienville	2847	144	1/20	Tables I,VII, & XII
Red Dirt	3121	290	1/11	Tables I, VIII,&XII
Russell Sage	682	34	1/20	Table I
Sabine	540	26	1/21	Table I
Union	856	76	1/11	Tables I & IX
West Bay	5607	355	1/17	Tables I, X, & XII
Fort Polk **	1531	93	1/16	Tables I & VI
Zemurray Park **	496	37	1/13	Tables I,XI, & XII
TOTAL	37375	2201	1/17	

* "Bucks only" hunting

** Manner in which hunts conducted does not reflect an accurate measure of hunter success.

Prepared by:
Dan Dennett
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Robert E. Murry
Project Leader

Date______________

TABLE I

COMPUTED LIVE WEIGHTS BY AGE CLASS OF DEER KILLED ON SOME LOUISIANA GAME MANAGEMENT AREAS DURING THE 1965 CONTROLLED HUNTS

			AGE	
AREA	SEX	6 Mos.	1½ yrs.	2½ yrs.
Alexander State Forest	Male	(22)* 50.6	(10) 84.0	(24) 140.63
	Female	(14) 46.2	(14) 76.3	(43) 86.4
Caldwell **	Male	--- ---	(20) 116.4	(6) 143.2
	Female	---	---	---
Catahoula	Male	(50) 52.8	(51) 84.5	(71) 120.2
	Female	(46) 49.8	(28) 75.4	(100) 89.2
Chicago Mill	Male	--- ---	(37) 130.5	(112) 177.1
	Female	---	---	---
East Carroll **	Male	--- ---	(3) 129.4	(2) 193.8
	Female	---	---	---
Evangeline	Male	(5) 63.0	(8) 91.1	(11) 136.6
	Female	(13) 58.1	(9) 79.8	(13) 88.6
Fort Polk	Male	(19) 50.7	(5) 90.4	(8) 125.7
	Female	(26) 49.8	(10) 73.7	(25) 89.2
Georgia-Pacific **	Male	--- ---	(118) 94.1	(185) 134.6
	Female	---	---	---

Cont'd.

Table I continued -

AREA	SEX		AGE	
		6 Mos.	1½ years	2½ yrs.
Jackson-Bienville	Male	(26)	(28)	(11)
		61.0	110.6	185.7
	Female	(26)	(9)	(38)
		48.0	93.7	106.1
Red Dirt	Male	(26)	(44)	(42)
		51.1	88.3	122.5
	Female	(50)	(39)	(84)
		48.7	79.3	91.6
Russell Sage	Male	(3)	(9)	(6)
		63.0	145.3	240.4
	Female	(6)	(3)	(9)
		56.4	94.2	113.7
Sabine	Male	(1)	(7)	(5)
		65.0	93.6	153.6
	Female	(3)	(3)	(7)
		57.7	80.3	100.9
Union	Male	(11)	(18)	(17)
		61.1	117.9	151.1
	Female	(7)	(6)	(15)
		54.6	94.3	106.1
West Bay	Male	(38)	(51)	(41)
		49.7	80.3	107.4
	Female	(55)	(80)	(61)
		44.8	75.6	82.6
Zemurray Park	Male	(5)	(5)	(5)
		36.7	74.8	77.3
	Female	(6)	(5)	(10)
		36.7	74.8	77.3

*Denotes Sample size
** "Bucks-only" hunting

TABLE II

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON CALDWELL GAME MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963	1964 **
6 mos.	Male	(40)*	----
		62.5	----
	Female	(27)	----
		58.2	----
1½ yrs.	Male	(44)	(20)
		111.0	116.4
	Female	(24)	----
		95.0	----
2½ yrs.	Male	(13)	(6)
		157.4	143.2
	Female	(49)	----
		105.3	----

* Denotes Sample Size
** "Bucks-Only"Season

TABLE III

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON CATAHOULA GAME MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(38)* 48.1	(50) 52.8
	Female	(27) 45.7	(46) 49.8
1½ yrs.	Male	(34) 81.6	(51) 84.5
	Female	(9) 70.6	(28) 75.4
2½ yrs.	Male	(41) 115.2	(71) 120.2
	Female	(73) 86.5	(100) 89.2

*Denotes Sample size

TABLE IV

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON CHICAGO-MILL GAME MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963**	1964***
6 mos.	Male	(24)*	----
		63.6	----
	Female	(21)	----
		60.3	----
1½ yrs.	Male	(43)	(37)
		121.7	130.5
	Female	(20)	----
		96.8	----
2½ yrs.	Male	(55)	(112)
		166.3	117.1
	Female	(69)	----
		122.6	----

* Denotes sample size

** Data from Madison part of area only

*** "Bucks only" season, data from entire area

TABLE V

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON EVANGELINE GAME MANAGEMENT AREA

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(17) * 55.4	(5) 63.0
	Female	(17) 51.9	(13) 58.1
1½ yrs.	Male	(18) 95.6	(8) 91.1
	Female	(9) 82.7	(9) 79.8
2½ yrs.	Male	(10) 119.4	(11) 136.6
	Female	(28) 96.3	(13) 88.6

* Denotes sample size

TABLE VI

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON FORT POLK GAME MANAGEMENT AREA.

AGE	SEX	YEAR 1963	 1964
6 mos.	Male	(7) * 54.4	(19) 50.7
	Female	(8) 46.5	(26) 49.8
1½ yrs.	Male	(6) 94.3	(5) 90.4
	Female	(4) 81.3	(10) 73.7
2½ yrs.	Male	(5) 136.0	(8) 125.7
	Female	(14) 81.4	(25) 89.2

* Denotes sample size

TABLE VII

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON JACKSON-BIENVILLE GAME MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(27) * 49.3	(26) 61.0
	Female	(43) 48.4	(26) 48.0
1½ yrs.	Male	(50) 108.4	(28) 110.6
	Female	(30) 87.5	(9) 93.7
2½ yrs.	Male	(34) 159.2	(11) 185.7
	Female	(70) 106.3	(38) 106.1

* Denotes sample size

TABLE VIII

COMPARISON OF COMPUTED AVERAGE LIVE WIEGHTS OF DEER KILLED ON RED DIRT MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(31)* 43.1	(26) 51.1
	Female	(28) 41.0	(50) 48.7
1½ yrs.	Male	(51) 80.5	(44) 88.3
	Female	(43) 73.2	(39) 79.3
2½ yrs.	Male	(47) 120.2	(42) 122.5
	Female	(50) 82.7	(84) 91.6

* Denotes sample size

TABLE IX

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON UNION GAME MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(10)* 58.7	(11) 61.1
	Female	(6) 58.0	(7) 54.6
1½ yrs.	Male	(8) 109.6	(18) 117.9
	Female	(4) 96.7	(6) 94.3
2½ yrs.	Male	(9) 157.1	(17) 151.1
	Female	(12) 100.1	(15) 106.1

* Denotes sample size

TABLE X

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON WEST BAY GAME MANAGEMENT AREA.

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(97)*	(38)
		53.5	49.7
	Female	(79)	(55)
		46.8	44.8
1½ yrs.	Male	(83)	(51)
		81.3	80.3
	Female	(87)	(80)
		77.1	75.6
2½ yrs.	Male	(90)	(41)
		103.4	107.4
	Female	(132)	(61)
		84.0	82.6

* Denotes sample size

TABLE XI

COMPARISON OF COMPUTED AVERAGE LIVE WEIGHTS OF DEER KILLED ON ZEMURRAY PARK GAME MANAGEMENT AREA

AGE	SEX	YEAR	
		1963	1964
6 mos.	Male	(2)* 46.5	(5) 37.2
	Female	(3) 33.7	(6) 36.7
1½ yrs.	Male	(7) 78.0	(5) 70.7
	Female	(6) 65.6	(5) 74.8
2½ yrs.	Male	(6) 114.2	(5) 119.2
	Female	(10) 84.3	(10) 77.3

* Denotes Sample size

DEER HERD REPRODUCTION RATIOS BASED ON NUMBER OF FAWNS PER 100 DOES OF AGE 2½ YEARS AND OLDER

	CATAHOULA G.M.A		EVANGELINE G.M.A.		JACKSON-BIENVILLE G.M.A.		RED DIRT G.M.A.		WEST BAY G.M.A.		ZEMURRAY PARK G.M.A.	
	1963	1964	1963	1964	1963	1964	1963	1964	1963	1964	1963	1964
ADULT DOES	73	100	28	13	88	38	50	84	132	61	10	10
FAWNS	65	96	34	18	92	52	59	76	176	93	5	11
RATIO	89	96	121	138	104	137	118	90	134	152	50	110

1963
STATE TOTAL

ADULT DOES	450
FAWNS	476
RATIO	106

1964
STATE TOTAL

ADULT DOES	306
FAWNS	346
RATIO	113

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN I
DEER INVESTIGATIONS

State of: Louisiana

Project No.: W-29R-12 Name Statewide Wildlife Investigations

Job No.: 6 Title: Annual Inventory of Deer Areas

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Deer range surveys were made in some areas and the findings made available to the Louisiana Wildlife and Fisheries Commission.

Recommendations: It is recommended that the inventory of the deer areas be continued. Recommendations for management of each area were incorporated in each report of area inventoried.

Objectives: Inventory areas for deer management information. The specific objectives are: (1) to learn as much as possible regarding the various deer ranges of the State and the herds that occupy them; (2) To recommend management measures for all deer ranges in the State; and (3) To compile a record of deer management regulations for various ranges during the recent history of management.

Techniques Used: The techniques used are taken from previously prepared recommended procedures for making deer range surveys and the guide for deer range survey report.

The surveys are made by the investigator going into the area, and as he traveled (by boat or vehicle) making stops and walking perpendicular to the line of travel. Stops are made as often as deemed necessary by the investigator. At each stop notes are made of occurance and use of browse and sign such as tracks, droppings, livestock, and dogs.

Local people are contacted as well as enforcement agents, Forestry Commission employees, and industrial foresters,for information concerning description of area, factors adversely affecting deer, factors that affect hunting, and economic liablity of deer in area.

A narrative report is prepared on each area surveyed. The report includes description of area history of deer herd and hunting seasons, factors adversely affecting deer, factors that affect hunting, condition of the range, condition of herd(if determined), ecomomic liability of deer in area, recommendations for coming season, the chances of getting the herd managed along sound biological principles, and an estimate of needs to facilitate deer management in the area. All the deer range survey

reports were forwarded to the Fish and Game Division office where the information is available for use in the setting of deer hunting regulations.

Findings: Because of space requirements the deer range survey reports covering work accomplished during this period will not be reproduced here.

Deer range surveys were made and reported on in all or portions of the following parishes: DeSoto, Bossier, Red River, Morehouse (Georgia Pacific Game Management Area), Rapides, Vernon, Sabine, Natchitoches, Grant, Winn Point Coupee, St. Landry, Avoyelles, Iberville, Lafayette, St. Martin, West Baton Rouge, Concordia, West Feliciana, Assumption, Iberia, Lafourche, St. James, St. John, St. Charles, St. Bernard and LaSalle. The field work was completed but the reports have not been prepared on the following parishes or portion thereof: Caldwell, Union-to include the Union Game Management Area, Jackson, East Carroll (Game Management Area) and Morehouse.

Prepared by:
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Approved by:
Robert E. Murry
Project Leader

Date____________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN I

DEER INVESTIGATIONS

State of Louisiana

Project No. W-29R-12 Name Statewide Wildlife Investigations

Job No. : 7 Title Southeastern Cooperative Wildlife Disease Study

Period Covered: July 1, 1964 to June 30, 1965

Abstract: Personnel of the Southeastern Cooperative Wildlife Disease Study made one field visit to Louisiana for the purpose of gathering blood samples for the current anaplasmosis study. One administrative meeting with the Study Director, the Regional Federal Aid Supervisor and Commission personnel was held. This meeting was to discuss the progress and future plans of the study in Louisiana.

Recommendations: This study should be allowed to continue in order that we may add to our knowledge of the diseases and parasites of wildlife.

Objective: To conduct field and laboratory investigations of wildlife parasites and diseases.

Techniques Used: All techniques are governed by the Southeastern Coop-

erative Wildlife Disease Study.

Findings: All findings are reported on by the Southeastern Cooperative Wildlife Disease Study. Personnel of the Southeastern Cooperative Wildlife Disease Study made one field visit to Louisiana for the purpose of gathering blood samples for the anaplasmosis study which is now in progress. One administrative meeting with the Study Director, the Regional Federal Aid Supervisor and Commission personnel was held. The purpose of this meeting was to outline future plans of this study in Louisiana and to critique some of the past projects carried out in Louisiana by the Southeastern Cooperative Wildlife Disease Study.

Prepared by:
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Approved by:
Robert E. Murry
Project Leader

Date______________

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN I
DEER INVESTIGATIONS

State of Louisiana

Project No.: W-29R-12 Name: Statewide Wildlife Investigations

Job No.: 8 Title: Preliminary Investigations of Introduction of Deer Browse Plants in Pine Forests

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Deer browse plant seed of various species were collected in the fall and winter of 1964. Some were stratified in the refrigerator prior to planting. Some were planted as seed removed from the fruit and others as whole fruit in the Spring of 1965. Checks were made of plots that were planted during the 1959-60 phase of this study. Germination percent ran from none, to low, to high, depending on the species and method of planting.

Recommendations: It is recommended that this job be continued with emphasis placed on establishing plots with pine (*Pinus spp.*) and yaupon(*Ilex vomitoria*) The plots should be replicated with various stocking rates of yaupon. The yaupon should be established with wild seedlings by dibbling them in. Plots with pine and redbay (*Persea borbonia*)

should also be established in the same manner as the yaupon and pine plots. Germination tests of deer browse plant seed should be tried under various field conditions.

Objective: To determine if deer browse plants can be introduced into pine forests and if competition will exist between the plants and pine and at what stocking rate competition occurs.

Techniques Used: This job was started during the 1959-60 period. All plantings of deer browse seed from that time through this period will be presented.

In 1959 information as to the methods in use for direct seeding of pine was obtained from foresters of the Southern Forest Experiment Station, United States Forest Service and foresters of the Louisiana Forestry Commission. It was found that two practices are in use. The first is to sow the pine seed on a disked strip. The strip is disked in the fall of the year and allowed to set until the soil has settled before planting. The second practice is to burn a heavy rough in the early Spring and allow the rough to grow for one year and broadcast the seed directly upon the ground.

Two species of pine, loblolly (*Pinus taeda*)and slash (*Pinus caribea*), were selected forstudy because they are being planted more extensively in Louisiana. The

recommended seeding rate for both species was one and one-half pounds of seed per acre.

Yaupon was chosen as the browse species to use because it is highly preferred. Yaupon also produces an abundance of seed which are easy to gather. Yaupon seed go through a dormancy of one year before germination. For this reason yaupon seed a year old were planted on some of the plots in an effort to get yaupon seedlings and pine seedlings the same age. Air dried fruit one year old and fruit of the year were used in the plantings. The seeding rate selected for the yaupon was one and one-half pounds of air dried fruit per acre. The fruit is in the form of a berry and normally contains four seeds, but some contain three or five.

In February 1960 the study was conducted on the Red Dirt Game Management Area by selecting and preparing a study site for the two practices of direct seeding of pine. Each study area was two acres in size and divided into eight one-quarter acre plots. Each plot was seeded to yaupon, a combination of yaupon and loblolly or slash pine seed, or to one of the species of pine.

The eight plots on both the disked area and the one year rough were planted as follows: (1) Yaupon

seed a year old as a control; (2) Yaupon seed a year old and slash pine seed; (3) Yaupon seed of the year and slash pine seed; (4) Slash pine seed as a control;(5)Yaupon seed of the year as a control; (6) Yaupon seed of the year and loblolly pine seed; (7) Yaupon seed one year old and loblolly pine seed, and (8) Loblolly pine seed as a control.

In 1961, on the Red Dirt Game Management Area, two one-quarter acre disked plots were seeded to yaupon seed that had been removed from the fruit. The plots were disked twice and on one the seed were broadcast and then cut in with a disk. On the other plot the seed were broadcast but were not covered. The seeding rate was approximately 1750 seed per one-quarter acre plot.

Two other plots located in standing timber were seeded to yaupon in 1961 on Red Dirt. One of these one-quarter acre plots was in a mixed stand of longleaf pine (Pinus palustris). The other was in an even age stand of longleaf pine from four to six inches D.B.H., that had been prescribed burned during the winter of 1960-61. The same seeding rate as described above was used.

On the Evangeline Game Management Area two one-

quarter acre plots were planted to yaupon seed in 1961. Both Plots were in an even age stand of longleaf pine. One plot was burned during the winter of 1960-61 and the other was not. No seedbed was prepared and the seed were not covered.

On Camp Claiborne, in Rapides Parish, two one-quarter acre plots were seeded to yaupon in the Spring of 1961. One of these plots was located in a three year old stand of slash pine. The other was selected in a stand of slash pine that was put out as seedlings in early 1961. No seedbed preparation was used. Here and on the Evangeline Game Management Area the seeding rate was the same as described above.

During the fall of 1961 fruits of various deer browse species were collected to conduct a germination test on their seed. Fruits collected were whitebay (*Magnolia virginiana*), redbay, arrowwood (*Viburnum dentatum*), possumhaw (*Viburnum nudum*), largeleaf gallberry (llex coriacea), strawberry bush (*Euonymus americanus*) and rattan (*Berchemia scandens*).

Wooden ammunition boxes 26 inches long by 14 inches wide by 4 inches high were obtained from the Army at Fort Polk. A top of one inch by two inch lumber covered with one-quarter inch mesh hardware cloth was made for

each box to exclude rodents. The boxes were filled with a mixture of one part peat moss to three parts sand.

The seed collected in 1961 were put in the boxes at the rate of 200 per box on one inch grid pattern. They were covered lightly with sand and peat moss and kept damp.

Of the material collected in 1961, whitebay, possumhaw, arrowwood, and rattan, 400 whole fruit were planted for test purposes and the same number of seed removed from the fruit was also used. For redbay 400 whole fruit from Fort Polk and 400 from the Red Dirt Game Management Area were tested. The redbay fruit collected at Fort Polk contained weevils while that gathered at Red Dirt did not. For this reason the fruit from both areas was used. For strawberry bush, 200 seed were used because only a limited number were collected. Largeleaf gallberry produces a fruit that contains from four to nine seed. For this reason only seed (400) of largeleaf gallberry were used.

Some seed were collected in 1962 from arrowwood, rusty blackhaw (Virburnum rufidulum), strawberry bush, largeleaf gallberry, and yaupon. Some seed of the arrowwood, rusty blackhaw, strawberry bush, largeleaf gallberry and yaupon were stratified for 90 days before being placed in germination

test. For largeleaf gallberry 400 seed were put to study. For arrowwood, rusty blackhaw, and strawberry bush 200 seed were used. In the fall of 1962 immediately after the seed were collected 200 strawberry bush seed were planted. Two hundred seed from yaupon collected in 1961 were germination tested in late summer of 1962.

The seed collected in 1962 that was put in the germination test were placed in the ammunition boxes in the same manner as described for those collected in 1961.

During the fall and winter of 1963, fruits of various deer browse species were collected to conduct a germination test on their seed. Fruit was collected from Whitebay, redbay, arrowwood, largeleaf gallberry, deciduous holly (Ilex decidua), yaupon, laurel greenbrier (Smilax laurifolia), honeysuckle (Lonicera japonica), and strawberry bush. In preparing the seed for the germination tests some were removed from the fruit and some were not.

In November, 1963, in a food plot on the Evangeline Game Management Area, 100 seed of each of the following were planted: yaupon, redbay, arrowwood, whitebay, largeleaf gallberry, and strawberry bush. At the same time 100 berries (fruit) of deciduous holly, arrowwood, and whitebay were planted. These were planted in plots two

feet square. Each plot was marked off in furrows opening the soil to a depth of about one-half inch. The seed or fruit were placed in the furrows and covered with one-quarter inch of soil.

In March, 1964, on the Evangeline Game Management Area the following were planted: whitebay fruit, whitebay seed, arrowwood seed, arrowwood fruit, arrowwood seed collected in 1962, strawberry bush seed, strawberry bush fruit, strawberry bush seed collected in 1962, deciduous holly seed, deciduous holly fruit, yaupon seed, yaupon fruit, yaupon seed collected in 1962, largeleaf gallberry seed collected in 1962, laurel greenbrier, and redbay. These were planted in the same manner as those in November, 1963.

On the Red Dirt Game Management Area in the fall of 1963 a food plot, approximately one acre in size, was plowed with a farm tractor and breaking plow. In January 1964, the plot was disked thoroughly with a farm tractor and disk. The plot was then laid off in strips two disks widths wide. Deer browse plant seed was sown broadcast one species per strip. One half of the planted area was covered by disking one disk width of the of the strip. The species planted were arrowwood seed, arrowwood fruit,

whitebay fruit, whitebay seed, strawberry bush seed, large-leaf gallberry seed, yaupon seed, yaupon fruit, redbay, and honeysuckle.

On the Red Dirt Game Management Area two areas burned in January, 1964, were selected to plant deer browse plant seed on. One area was on a hill and the other was in a stream bottom. Plots were marked off in a 12 foot square manner on each area and one specie was planted per plot. The seed or fruit were planted in March, 1964. Those planted were yaupon seed, yaupon fruit, yaupon seed collected in 1962, redbay, whitebay seed, whitebay fruit, arrowwood fruit, arrowwood seed collected in 1962, strawberry bush seed, strawberry bush seed collected in 1962, deciduous holly seed, deciduous holly fruit, honeysuckle and laurel greenbrier.

In February, 1964, deer browse plant seed were planted in plots on the Bodcau Game Management Area. Each plot represented a different soil type. The first plot was a food patch that had been cultivated each year for several years. Two strips were prepared with a farm tractor and disk. One strip was planted to yaupon seed and the other to yaupon fruit. Neither strip was covered.

One plot was an old field that had been allowed to grow up in broom sedge (Andopogon sp.). The area was prepared for

seeding by disking thoroughly in alternate strips of a prepared strip and a rough or undisked strip. One specie was planted to each prepared strip and adjacent rough on one side. Species planted were yaupon seed, yaupon fruit, arrowwood seed, arrowwood fruit, laurel greenbrier, redbay, whitebay fruit, whitebay seed, deciduous holly, honeysuckle, strawberry bush, and largeleaf gallberry. For some species two strips were planted. None of these plantings were covered.

Another plot was planted in an old field that had been allowed to grow up in broom sedge and had been burned. Strips were prepared in this plot and planted in the same manner as described in the above paragraph. Species planted in this plot were yaupon seed, arrowwood seed and fruit, whitebay seed and fruit, redbay, largeleaf gallberry, honeysuckle, and laurel greenbrier. None of these were covered.

The fourth plot was in another old field that had grown up in broom sedge. Five strips that had been prepared by disking part and leaving an adjacent rough were planted. Species planted were yaupon seed, redbay, arrowwood seed and fruit, and smilax.

In the Spring of 1964, seed of some deer browse plants were planted in boxes at the Alexandria Office. These are the same boxes that have been used since 1961 and were

described earlier in this report. The seed were planted in the same manner as those mentioned earlier. Species planted, 200 per box, were whitebay fruit, laurel greenbrier, deciduous holly, arrowwood seed and fruit, honeysuckle, redbay-seed covered, redbay-seed not covered, largeleaf gallberry, yaupon seed, and yaupon fruit.

Some redbay and arrowwood planted in boxes in the Spring of 1962 and some arrowwood stratified for 90 days and planted in the Spring of 1963 were left in the boxes.

In the Fall of 1964, fruit of white bay, strawberry bush, and yaupon were gathered. The seed were removed from some of the fruit of all species. The fruit and seed of whitebay and strawberry bush were stratified in the refrigerator for 120 days before being planted. The fruit and seed removed from the fruit of all the named species were planted in a food plot on the Evangeline Game Management Area. Both fruit and seed of the whitebay and strawberry bush were planted in plots two feet long by four feet long. The yaupon was planted in plots 10 feet square. The seed were broadcast on the ground and then covered with dried pine needles.

All the species mentioned above as planted in plots in the field since the beginning of this study were inspected in the Spring of 1965. Those planted in boxes in 1964 and those

mentioned as being left in the boxes in 1964 were also observed.

ndings:

On the plots established on the Red Dirt Game Management Area in 1960 and planted to yaupon and pine, the pine came up to a poor stand. None of the yaupon seed germinated.

In the germination tests where the seed and fruit were collected in 1961 and planted in boxes the percent of those that germinated were:

1. Whitebay - seed in fruit -11 percent.
2. Whitebay - seed removed from fruit - 21 percent.
3. Rattan - seed in fruit - 58 percent.
4. Rattan - seed removed from fruit - 93 percent.
5. Arrowwood - seed in fruit - none.
6. Arrowwood - seed removed from fruit - 20 percent.
7. Strawberry bush - Seed removed from fruit - 48 percent
8. Redbay- Collected on Fort Polk - 12 percent.
9. Redbay-Collected on Red Dirt - 18 percent
10. Possumhaw- seed removed from fruit- 75 percent
11. Possumhaw-seed in fruit - 21 percent
12. Largeleaf gallberry - seed removed from fruit - none.

Arrowwood and rusty blackhaw colllected in 1962 and planted in boxes started germinating in the early Spring of 1965. On arrowwood and rusty blackhaw the germination was 20 percent for each. The strawberry bush and largeleaf gallberry did not germinate.

Of the seed planted on Evangeline Game Management Area in November 1963, redbay was the only one to germinate in the Spring of 1964. Only eight out of 100 seed came up. In the Summer of 1964 the number increased to 13. Whitebay

came up in the Summer of 1964. Seventeen of those were found. The seed of the remainder of the species planted in 1963 did not come up.

Of the seed planted on the Evangeline Game Management Area, in March of 1964, none came up until the Summer of that year. Those that came up were redbay, arrowwood, and whitebay at 18, 21, and 17 percent respectively. The yaupon seed collected in 1962 and planted in 1964 came up at 54 percent in the Spring of 1965. The yaupon seed collected in the Winter of 1963-64 and planted on Evangeline in the Spring of 1964 started coming up in the Spring of 1965 and 29 percent had germinated by June 30.

On Red Dirt of the seed planted on the disked plots only redbay came up. Here 17 plants were eventally found. Of those planted on the burned plots in the Spring of 1964 only seven redbay were found to have come up.

Of all the seed planted on the Bodcau Game Management Area in 1964, only one redbay and a few laurel greenbrier plants were found in 1964. In 1965 none could be found.

In seed germination study carried out at the Alexandria Office where the seed were planted in boxes in 1964, honeysuckle and redbay came up that Spring. For redbay it was eight percent for the seed not covered and six percent for

the covered. Twelve percent of the honeysuckle had germinated. The germination of this species continued and at the end of the Summer it was 87 percent. Redbay increased to 15 percent for the covered and 33 percent for the uncovered in the Spring of 1965.

The arrowwood planted in the boxes in 1962 had increased in germination percent to 31 in the Spring of 1965.

Yaupon planted in the boxes in 1964 started coming up in the Spring of 1965. Thirty-four percent were found to have come up.

None of the species planted in 1965 have come up by June 30.

It was found that such species as yaupon, arrowwood, and rusty blackhaw will not germinate during the first year after planting. The species may come up a year or two after planting.

None of the largeleaf gallberry planted during this study came up.

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JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN I
DEER INVESTIGATIONS

State of: Louisiana

Project No.: W-29R-12 Name: Statewide Wildlife Investigations

Job No. 9 Title: Preliminary Survey of Parasites of White-tailed Deer in Louisiana.

Period Covered: July 1, 1964, to June 30, 1965

ABSTRACT: Two deer were collected and autopsied for the purpose of this study during the period covered by this report. One of these deer was a fallow deer. A series of color slides of normal internal organs of the white-tailed deer was made. A collection of normal white-tailed deer bones was made. These samples of normal deer anatomy will be used as reference material in learning to recognize organs and structures. No new parasites were found during this segment of study.

RECOMMENDATIONS: The goal of this study is one that cannot be attained quickly, even under the most ideal conditions. The

services of qualified parasitologists cannot always be obtained when they are needed. This factor has limited the progress of this study from the very beginning. A renewed effort should be made to find a qualified parasitologist that will be available to make the necessary field trips to gather data for this study. If this can be accomplished we will be able to examine deer from those areas of the state that have not yet been surveyed. This study should be continued until deer from all major deer herds in the state have been examined. Any progress, however small it may appear at the time, will help to fill some portion of the gaps in our knowledge of the parasites found in the white-tailed deer in Louisiana.

Objectives: The objective of this job is to compile a list of the more common parasites of the white-tailed deer in Louisiana and familiarize technicians with these forms and their associated pathology.

Techniques Used: Standard post-mortem examination procedures were used for these studies. Each deer was methodically dissected and inspected for parasites or tissues that appeared to be abnormal. Color slides were taken of normal organs and tissues with a 35 mm single lens reflex camera. Deer

carcasses were stripped of as much muscle tissue as possible and placed in a wire enclosure in order that the bones would dry and bleach and not be scattered by scavengers.

Findings: Only two deer were examined for parasites during the current segment of this job. One of these deer was a 1½ year old male fallow deer (Dama dama). This deer was taken from a herd of simi-wild deer that range on a 5000 acre private estate. Gross examination of this deer revealed no endoparasites. This deer was by far the cleanest animal yet examined during the entire course of this study. Whether or not this is characteristic of the fallow deer in Louisiana will have to be determined by future post-mortem examinations of this species of deer. These deer might possibly be more resistant to our native deer parasites than the white-tailed deer.

A 2 year old female white-tailed deer from Delta National Wildlife Refuge was grossly examined for parasites. This deer was in excellent physical condition. The only endoparasite found in this deer was the large american liver fluke (Fascioloides magna). This parasite was found encysted in the liver of the deer. Two

cysts were found, one contained 3 adult flukes and the other contained two adult flukes. No other parasites were found in the gross examination of this animal. The head of this deer was saved to be examined for brainworms (odocoileostrongylus tenuis) and nose bots (Cephenemyia phobinger) by a graduate student at Louisiana State University and the results have not been received at this writing.

A series of color slides of the internal organs of a normal healthy adult deer was made. This slide series was made to be used as a training aid in familiarizing our technical staff with the color, size, shape, and texture of the more important organs of the white-tailed deer in order that they would be able to recognize abnormal tissues in the course of routine field duties dealing with deer. It is not the intent and aim of this job to make pathologists and parasitologists out of our technicians, but rather to make them familiar with the normal conditions of the internal organs. Once this is accomplished, they will be able to quickly recognize the abnormalities caused by parasites and disease. New slides will be added to this series continuously.

In conjunction with the slide series, a collection of deer bones has been started. Here again, the series will be used to familiarize our technical staff with bones taken from a normal deer skeleton. This knowledge will be of value when field investigations are made of deer die-offs. The skeletons of mammals other than deer are found and reported as being deer by interested sportsmen on some occasions. A knowledge of the typical skeletal parts of a deer can quickly eliminate this type of complaint. There have also been times when a collection of deer bones could have been of great help in the identification of suspicious pieces of mammal carcasses impounded by game wardens. The bone collection will be valuable as a reference standard on future occasions.

The progress of this job was hindered by the Study Leader being on educational leave during most of the period covered by this report. An effort will be made during the coming segment to investigate the parasites occurring in deer herds not surveyed as yet.

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JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN I

DEER INVESTIGATIONS

State of Louisiana

Project No.: W-29R-12 Name Statewide Wildlife Investigations

Job No.: 11 Title: Interralationships of Wildlife and Plant Communities in Loblolly-Shortleaf Pine-Hardwood Forest of Central Louisiana

Period Covered: July 1, 1964, through June 30, 1965

Abstract: The fences of the three enclosures and controls were checked and the right-of-way maintained. The levees and spillways of the watering ponds were also maintained. The drive to verify the presence of the proper number of deer revealed each enclosure was properly stocked with the exception of the four deer enclosure. It had three deer and one of these was a buck. All animals were removed from the four deer enclosure and it was restocked with four females. One deer was removed from the eight deer enclosure and was replaced.

Recommendations: It is recommended that this job be continued with the same objectives as in the past.

Objective: This job has three objectives. They are: (1) to check the fence around three 160 acre enclosures and their 20 acre controls and to keep the fence right-of-way free of brush and to maintain the levees and spillways

of the watering ponds; (2) To verify the presence of deer in each enclosure; and (3) To get weights and body measurements of deer in the enclosure and replace the deer in an orderly manner.

Techniques Used:

To inspect the fence around the three 160 acre enclosure and their 20 acre controls every two weeks, and immediately after each heavy rain and high wind, for washouts and for trees or tree branches that may have blown on it. To control bushes and briars on the fence right-of-way a farm tractor and rotary brush cutter is used.

Fertilizer was also put on established sod at various places along the fence right-of-way. To establish a sod in some places along the right-of-way fertilizer and bahia grass seed were applied.

To verify the presence of deer in each enclosure the standers and drivers are used. Each enclosure is 2112 feet wide and 3300 feet long. The standers are placed along the access road that crosses the narrow width of each enclosure. The standers all face in one direction and count the deer that pass between them and the next stander. The drivers are placed at a distance of 30 feet along the fence on one end of the enclosure. On signal

the drivers walk toward the access road where the standers are. After reaching the road where the standers are the drivers walk around the fence to the opposite end of the enclosure, take the proper interval, and on signal drive toward the standers. The drivers check all felled tree tops and thickets for deer. Each driver counts all deer that pass back through the line to his right between himself and the next driver.

To get weights and body measurments of the deer and to bring the four deer enclosure up to the proper stocking level the deer were removed by trapping or shooting. Traps were operated and a hunt conducted in the eight deer enclosure to remove three animals to begin an orderly replacement of the deer.

Findings: The fence was checked, the fence right-of-way maintained, and spillways and levees to the watering ponds were maintained. The drive to verify the presence of deer in **each** enclosure revealed two in the two deer enclosure, three in the four deer enclosure, and eight in the eight deer enclosure. One of the three deer in the four deer enclosure was identified as an adult buck. A female and the buck were trapped and a female was shot to remove the deer from the four deer enclosure. An in-

tensive effort was put forth checking this enclosure for other deer before the new animals were put in. Only one deer was removed from the eight deer enclosure. It was trapped, but apparently was injured and died in the trap.

Five deer, nine to twelve months old, were trapped on the Red Dirt Game Management Area and used as replacements. Four of these were released in the four deer enclosure and one in the eight deer enclosure. All deer were x-rayed by a local veterinarian to make sure they were not pregnant. The release of these deer brought the four and eight deer enclosures up to the desired stocking level.

Weights were obtained from the two females removed from the four deer enclosure. One of these deer had been removed from the eight deer enclosure in May, 1963, and released in the four deer enclosure. When removed from the eight deer enclosure it weighed 92 pounds. When shot it weighed only 80 pounds. Externally the deer appeared to be in good condition. Internally there was an abundance of fat around the viscera. The female removed

from the four deer enclosure by trapping weighed 100 pounds. Unfortunately, a weight was not obtained from this deer when it was trapped on Red Dirt in 1963. This deer was approximately one year old when released in this enclosure in May 1963.

The deer trapped in the eight deer enclosure was not weighed.

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JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN I

DEER INVESTIGATIONS

State of: Louisiana

Project No: W-29R-12 Name: Statewide Wildlife Investigations

Job No.: 12 Title: Rumen Content Analysis

Period Covered: July 1, 1964 to June 30, 1965

Abstract: Rumen samples from seven white-tailed deer have been analyzed by gross examination of the larger food particles. Four of these samples were taken from deer collected at Barksdale Air Force Base, Bossier Parish, Louisiana; one from Fort Polk, Vernon Parish, Louisiana; one from near Packton, Winn Parish, Louisiana; and one from Haughton in Bossier Parish, Louisiana. Additional investigations on the techniques of rumen sample analysis has revealed that many of the smaller particles of rumen content can also be identified by the individual characteristics of cell structures.

Recommendations: The continuation of this study will gradually provide us with a basic understanding of the food habits of deer during all seasons of the year in each of the major timber types of the state. Provisions

should be made to furnish each of our field offices with a supply of rumen sample collecting jars filled with formalin solution in order that rumen samples can be collected whenever they become available. Samples should be taken from confiscated illegal deer, road kills, hunter kills, and at any other opportunity throughout the year. By approaching this problem in this manner, we will gradually build a background of information pertaining to the seasonal food habits of the white-tailed deer in Louisiana. A collection of reference plant material should be made.

OBJECTIVES: This job is designed to provide information pertaining to the seasonal food habits of the white-tailed deer in Louisiana.

TECHNIQUES USED: Rumen samples were placed in quart fruit jars in a 10 per cent formalin solution. Samples were taken to the laboratory and were washed in a 16-mesh screen to remove excess formalin and particles of food material that were too small to be identified by gross examination. The remaining food particles were spread upon 12x18

white enamel pans and examined under a 3X lamp magnifier. The percentages of the components of the sample were obtained by ocular estimate.

Photomicrographs of the epidermal layers of some of the larger particles of food were taken with a 35 mm reflex camera mounted on a monocular microscope. A drop of water was placed under the cover slip of slides that had been stored under refrigeration before filming. The magnifications used for filming were 220x and 440x. Light intensities varied with the individual thickness or cell patterns of the epidermal layers.

Several methods of preparing the epidermal peels for photographing were used. The most practical method found was the mechanical peeling of the epidermis using a surgeon's scapel and forceps. In this manner, thin strips of the epidermal cell layers were removed from fresh leaf fragments and placed in drops of water on clean 1½ x 3 inch noncorrosive half-white slides and covered with one inch cover slips. Slides prepared in this manner could be stored at refrigerator temperature

for as long as two weeks before photographing. The resulting photographs were used as references in the identification of unknown leaf fragments. These pictures of known sample tissues show the distinctive differences between the leaves of the various species of plants encountered in the sample material and by comparison with unknown leaf fragments aid in the identification of the smaller particles of the sample material that would be classed as unknown in gross examination.

indings:

The rumen content of a doe white-tailed deer taken from Fort Polk, Vernon Parish, Louisiana, in May of 1963, contained eight identifiable plants. Summer grape (*Vitus* sp.) noseburn (*Tragia cordata*), goat's rue (*Cracca virginiana*), and aster made up the majority of the sample content. Traces of sassafras (*Sassafras albidum*), haw (*Crataegus* sp.) and unidentifiable grasses were also found. Summer grape and goat's-rue were the most abundant species, and aster and noseburn were slightly less abundant. Herbaceous material made up

approximately 50 per cent of the entire sample. The remainder of the sample was unidentifiable leaves, twigs, and bits of mushroom.

The rumen sample from a deer taken on the Winn Parish deer study area near Packton, Louisiana, in March of 1963, was examined. The major part of this sample was composed of large leaves and buds of woody plants. Both mushrooms and the long cigar-shaped buds of beach (Fagus grandifolia) were abundant in this sample. Turkey berry (Mitchella repens) was found in the sample but only one stem had identifiable leaves. This species was present in only trace amounts. No other herbaceous plants were identified from this sample.

A rumen sample collected from a deer killed at Haughton, Bossier Parish, Louisiana, in May of 1963, was composed mostly of stems and leaves of wood plants. Mayhaw (Crataegus opaca) fruits made up a major portion of the total volume of the rumen sample. Herbaceous material was estimated at less than 5 per cent of the sample. Some unidentified grasses and the stems and leaves of aster (Aster sp.) were also found. No other

material was identified from this sample.

Four rumen samples were taken from the Barksdale Air Force Base Reservation, Bossier Parish, Louisiana, on February 20, 1963. Two of the samples were composed mostly of acorns from shumard oak (*Quercus shumardii*) and white oak (*Quercus alba*). Traces of smilax (*Smilax* sp.),heartvine (*Cardiospermum halicacabum*), white dutch clover (*Trifolium repens*)and oats (*Avena satiua*) were found in these two samples.

The other two samples examined were composed of approximately 50 percent oats. Traces of smilax and clover were found. Considerable amounts of broad leaved plants were present but were not identified. Carolina cranesbill (*Geranium carolinianum*) was found in both.

The rumen samples mentioned in this report were analyzed by graduate student, M. Keith Causey, as a part of his thesis research project for the degree of Master of Science in game management. These samples were made available to the Louisiana Cooperative Wildlife Unit for their use in Causey's study. Future examination of rumen samples should be made using the techni-

niques outlined in this preliminary phase of the job.

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JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN I

DEER INVESTIGATIONS

State of Louisiana

Project No. : W-29R-12 Name Statewide Wildlife Investigations

Job. No. 14 Title: Publication on Louisiana Deer

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Background and supporting data that were collected during this period were assembled and reviewed.

Recommendations: It is recommended that this job be continued with the same objective as was set forth for the year 1964-65.

Objective: To prepare a publication for distribution to interested citizens and sportsmen from deer data that has accumulated through the years 1949-1964.

Techniques Used: Background and supporting data obtained during this period relative to the publication were assembled. These data were reviewed. A rough draft of the publication will be prepared by the end of September, 1965. The finished publication is expected to be ready for distribution by March, 1966.

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JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN I
DEER INVESTIGATIONS

State of Louisiana

Project No.: W-29R-12 Name Statewide Wildlife Investigations -

Job No: 15 Title: Preliminary Investigation of Palatability of Sprouts Produced by Herbicide Treated Browse Species

Period Covered: July 1, 1964 through June 30, 1965

Abstract: A study area was set up to produce sprouts by treating deer browse species with herbicide, with burning, and with cutting. The herbicide used was, 2, 4, 5-T. An abundance of sprouts was produced by the species that were burned and cut. The herbicide treated species did not produce many sprouts. The palatability of some species was increased by the production of sprouts. Some plants considered to be desirable deer browse species produced sprouts that were lightly utilized. Samples of sprouts from seven species on the three treated areas were collected to be analyzed chemically for the retention of herbicide and the nutritional value.

Recommendations: It is recommended that this job be continued until more sprouts produced by herbicide treated browse species are

checked. Those plants treated last summer with the herbicide did not put on a sufficient number of sprouts to get field evaluation of deer utilization.

Objective: The objective of this job was to determine if sprouts produced by 2, 4, 5-T treated browse species retained the herbicide and the effect it had on their palatability. It was attempted to determine if the deer would make a choice between sprouts produced by plants treated by the various methods.

Techniques Used: To accomplish the objective of this job spouting of deer browse species was induced by three methods: (1) herbicide treatment, (2) burning, and (3) cutting. A cattle free study area was selected on the Red Dirt Game Management Area. This area was situated in a stream bottom that was extremely wide. The overhead canopy of the study area was of medium density and made up of loblolly pine (*Pinus taeda*) white oak(*Quercus alba*), water oak (*Quercus nigra*), and beech (*Fagus grandifolia*). The Understory was made up of black gum (*Nyssa sylvatica*), maple (*Acer rubrum*), spring huckleberry(*Vaccinium elliottii*) , yaupon (*Ilex vomitoria*)., azalea (*Rhododendron canescens*) water oak, sweetleaf (*Symplocos tinctoria*), witch-hazel (*Hamamelis virginiana*), whitebay (*Magnolia virginiana*), parsley

hawthorn (Crataegus marshallii), redbay (Persea borbonia), snowball (Styrax americana), largeleaf gallberry (Ilex coriacea), candleberry (Sebastiana ligustrina), and flowering dogwood (Cornus florida). This area was chosen because a variety of plants could be treated on a small area.

The study area was divided into four plots. Each plot was approximately one acre in size. Desirable and intermediate preference deer browse species on one plot were treated with 2, 4, 5-T (four pounds acid equivalent per gallon) at a concentration of eight pounds acid equivalent per hundred gallons of water and diesel oil emulsion. The herbicide was applied to each plant through the use of a back pack type sprayer.

Deer browse species, on one plot, considered to be of desirable and intermediate preference were cut with a brush blade. There was no effort made to cut these at any specific height. The cut was made at a convenient height anywhere near ground level to 18 inches.

One plot was burned in March 1965. One plot was not treated and is used as a control. Periodic observations were made to determine if there was a choice, by deer, between the sprouts produced on browse species as

treated by the three methods described above.

Samples of sprouts from whitebay, redbay, maple, dogwood, azalea, blackgum, and largeleaf gallberry, were clipped from all three treated plots. Growth of this year was clipped from the same species on the control plot. These samples were taken to the Cooperative Wildlife Research Unit at Louisiana State University. There they were oven dried and ground. Chemical analysis for the retention of herbicide and for the per cent of crude protein, calcium, and phosphorus will be performed by the Feed and Feeding Laboratory at the University.

Findings: The results of the field observations showed there was an abundance of sprouts produced on both the burned and cut plots. These sprouts had made luxuriant growth. Sprouts produced by the herbicide treated plants were not very abundant. The sprouts that were produced were generally growing rather slow. There was no significant difference in the amount of deer usage between the burned and cut plots. Deer tracks were abundant in both. Browse sign on the herbicide treated plot could not be found. Deer tracks were absent in this plot.

It was noted in the burned and cut plots that there

was very little usage on yaupon, redbay, and whitebay. These species are considered desirable on this particular range. On both plots practically every sprout on blackgum, maple, and water oak had been browsed. These species are considered desirable on this range. On both plots the sprouts of two intermediate species, spring huckleberry and azalea, were highly utilized. The sprouts of witch-hazel, an undesirable species, were used heavily. Dogwood, on both plots, put on an abundance of sprouts and was lightly utilized.

It is believed the abundance of luxuriant sprout growth on the burned and cut plots attracted the deer.

The analysis of sprout samples sent to Louisiana State University will not be completed before September, 1965.

Prepared by:	Approved by:
Louis E. Brunett Deer Study Leader	Robert E. Murry Project Leader

Date______________

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN I
DEER INVESTIGATIONS

State of Louisiana

Project No. : W-29R-12 Name Statewide Wildlife Investigations

Job No.: 16 Title: Investigations of Feasibility of Winter Plantings for Deer

Period Covered: July 1, 1964 through June 30, 1965

Abstract: The wheat planted in the south 40 to determine the affects browsing had on the production of green forage indicated there was a significant decrease in production where the wheat was clipped periodically. On the strips where wheat was grown under various fertilization rates the strip fertilized at the rate of 200 pounds 12-12-12 per acre when planted and top dressed with 200 pounds fertilizer of the same formulation produced the most green forage.

Recommendations: It is recommended that this study be continued. In order to further evaluate the utility of winter plantings for deer it is recommended that a study be conducted for the next two years involving honeysuckle (Lonicera japonica) for one year and honeysuckle and wheat for the next. This study should be carried out in the two 40 acre

deer corrals on the Red Dirt Game Management Area where two acres of honeysuckle have been established in the north 40. It is further recommended that the 1966-67 period of the study be used to evaluate the use of honeysuckle in one 40 against wheat in the other.

Objectives: The objectives of this study are: (1) determine the practicability of establishing honeysuckle on plots for deer, (2) to determine the amount of forage produced per acre of honeysuckle plantings, (3) to determine the affect browsing had on the production of green forage by wheat, and (4) to determine the affects various fertilization rates had on wheat production.

Techinques Used: This study was to be conducted in two 40 acre deer corrals on the Red Dirt Game Management Area. These two corrals are in typical Red Dirt timber types and topography. These corrals are referred to as the south 40 and north 40.

In the fall of each year on Red Dirt considerable food patch acreage has been planted to wheat. Deer use this wheat heavily each winter. The seeding and fertilization rate is two bushels of seed and 200 pounds of 12-12-12 fertilizer per acre.

In the fall of 1963 a total of two acres of wheat was planted in the south 40.

There was nothing planted in the north 40. Four deer were released in each of the corrals. The results of those plantings and the effects it had on the deer versus the corral that had deer put in but no plantings are reported in the annual job completetion report covering the period July 1, 1963 through June 30, 1964.

For the pur pose of accomplishing the first two objectives of this study an effort was made to establish two acres of honeysuckle in the north 40. The honeysuckle plants were put out but had about a 50 per cent survival. The surviving plants did not make much growth. Considering there was not enough honeysuckle present to carry on the study, it was not continued during this period.

After it was determined that the objectives requiring honeysuckle could not be attained alternate objecives, three and four, were added. To accomplish objective three, one-half acre of wheat was planted in the south 40. The fertilization and seeding rate was 200 pounds of 12-12-12 fertilizer and two bushels of seed per acre.

To protect this wheat from rabbits poultry wire, of one inch mesh, two feet in height was put around the plot.

Twenty paired plots were randomly established over the planting. One of each pair was clipped three times and the other was clipped only at the termination of the measurement period. A buffer zone, 10 feet wide, was established around the entire plot to avoid the affects of competition from brush and trees on the wheat.

Each clip plot was square and contained 10 square feet. Plots of this size was chosen so it would be easier to work with mathematically. The plot to be clipped periodically was paired with one that would not be clipped until the others were clipped for the last time.

The location of each pair of plots was determined mechanically. A number was assigned each pair and put in a hat. Numbers were drawn representing the locations of each pair of plots. Each pair of plots was then established on the ground by measuring, with a 100 foot steel tape, from the inside of the buffer zone.

It was originally planned to clip one of the paired plots each week. After the first clipping the wheat did not make sufficient growth for these plots to be clipped as planned.

To determine the affects various fertilization rates had on wheat production a study plot located outside the deer corrals was planted. The plot was marked off in five strips. Each strip being approximately 10 feet wide. On all strips wheat was planted at the rate of two bushels of seed per acre. The strips were fertilized at the following per acre rates: (1) 200 pounds of 12-12-12 when planted and top dressed later with 50 pounds of ammonia nitrate, (2) 400 pounds of 12-12-12 when planted, (3) 200 pounds 12-12-12 when planted, (4) 200 pounds 12-12-12 when planted and top dressed later with 200 pounds of 12-12-12, and (5) no fertilizer. All wheat was planted on October 12, 1964.

To protect some wheat from being utilized, by deer enclosure cages constructed from 1 x 2 inch weld wire were used. The cages were round in shape and covered an area equal to one meter square. They were two feet in height. Four protective cages were used on each strip.

On April 8, 1965, the wheat under the protective cages was clipped and weighed to determine the amount produced on each strip. Five pounds, green weight, of

clipped wheat was air dried to obtain a dry weight conversion factor in order to compute total production on dry weight basis.

Findings: The 50 per cent survival of the honeysuckle plants put in the north 40 in the summer of 1964 plus the poor growth of the survivors caused cancellation of the pursuit of the first two objectives. During the winter of 1965 the honeysuckle was replaced. All of it was fertilized with 12-12-12 fertilizer at the rate of 200 pounds per acre. All plants were making good growth through June.

On the plot planted to wheat in the south 40 those study plots clipped three times produced less wheat than the control plots that were clipped once. All 20 study plots produced a total (three clippings) of 20 pounds and one ounce green weight. The control plots (clipped once) produced 22 pounds and eight ounces green weight. Per acre basis this would have been 4356 pounds for the study plots and 4,878.7 pounds for control. On a per acre basis this would be significant.

In the south 40 during the 1963-64 phase of this

study wheat plots planted at the same fertilization and seeding rate as this plot produced 6,142 pounds green weight.

According to the above information it was found that on a per acre basis clipping of wheat to simulate browsing does have an affect on production of green weight on a per acre basis.

On the plot outside the corrals where the wheat was planted in strips at various fertilization rates the following was the amount of green forage produced projected to the acre basis:

(1) 200 pounds 12-12-12 when planted and top dressed with 50 pounds ammonia nitrate - 8,250 pounds;
(2) 400 pounds 12-12-12 when planted 8,560 pounds;
(3) 200 pounds 12-12-12 when planted 7,376 pounds;
(4) 200 pounds 12-12-12 when planted and top dressed with 200 pounds 12-12-12 - 13,126 pounds;
(5) No fertilizer - control strip - 2,500 pounds.

On strip number four there were more deer tracks than on the other strip. This was very noticable from the time the wheat was top dressed on December 7 until the spring green up. Observations revealed the deer were utilizing this strip more than the others. The wheat

on this strip had a noticable darker green color than the others.

repared by:
Louis E. Brunett
Deer Study Leader

Approved by:
Robert E. Murry
Project Leader

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JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN I

DEER INVESTIGATIONS

State of: Louisiana

Project No. : W-29R-12 Name Statewide Wildlife Investigations

Job No.: 17 Title: Investigations of the Effects of Burning in Longleaf Pine Type, Loblolly-Shortleaf Pine-Hardwood Type, and Bottom-land Hardwood Type

Period Covered: July 1, 1964 through June 30, 1965

Abstract: On the Red Dirt Game Management Area a three acre plot was established and burned during the summer of 1965. A three acre control plot was established adjacent to it. On Red Dirt four plots, each two acres in size, were established and three were burned in March, 1965. One of the two acre plots will be maintained as a control. On the Catahoula Game Management Area four plots, two acres in size, were established and treated in the same manner as those on Red Dirt.

Recommendations: It is recommended to continue this job as it is with the exception of burning in the bottomland hardwood area. It was planned to conduct the hardwood burning

on the Russell Sage Wildlife Management Area. A large portion of this area is inundated every winter and early spring. This makes it difficult to find a suitable site to burn in the winter. Therefore, it is recommended to to suspend this phase of the study.

Objectives: To determine the effects of summer burning on deer browse species along the stream bottoms in the longleaf pine timber type. To determine the effects of winter burning every year, every two years, and every three years on deer browse plants in the longleaf pine, loblolly-shortleaf pine-hardwood timber type, and in bottomland hardwoods.

Techniques: On the Red Dirt Game Management Area, in the stream bottom of Steep Hill Creek, two adjacent plots, each three acres in size, were established. One of these plots was burned in June, 1965. The other plot will not be burned and will be used as a control. These plots begin in the creek bottom and extend out to and includes a hillside. The treated plot is to be burned every two years, in June, until it is burned three times.

On the Red Dirt Game Management Area, four plots, each two acres in size, were established. These plots

begin in the creek bottom of Steep Hill Creek, and extend out onto the hillside. Three of the plots were burned in March, 1965. One plot will not be burned as it will be used as a control. Hereafter the plots described above will burned in the following manner: (1) one burned every year, (2) one burned every two years, and (3) one burned every three years. These plots will be used to accomplish the objectives related to the longleaf pine timber type.

On the Catahoula Game Management Area, in the loblolly-shortleaf pine-hardwood timber type, four plots were established. Each of these plots is two acres in size. The plots are side by side beginning in a stream bottom and extending out onto a hillside. Three of these plots were burned in January, 1965. One plot will not be burned as it will serve as a control. These plots are to be burned one every year, one every two years, and one every three years.

After the 1965 growing season deer browse species on all of the above plots will be marked and checked. They will be marked so the same plant can be checked each year. The plants will be checked by noting the condition of the main stem, counting the number of

of sprouts produced by each old stem, and by getting the total length of the main stem of each sprout.

Findings: The study plants will not be checked until after the growing season. Therefore, there are no findings to report.

Prepared by:
Louis E. Brunett
Deer Study Leader

Approved by:
Robert E. Murry
Project Leader

Date______________

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN II
WATERFOWL STUDY

State of Louisiana

Project No.: W-29R-12 Name Statewide Wildlife Investigations

Job No. 2 Title Aerial Census of Louisiana Waterfowl

Period Covered: July 1, 1964 through June 30, 1965

Abstract: The mid-winter inventory showed the highest number of any inventory this year. A total of 4,899,000 ducks, 435,110 geese and 2,001,075 coots were counted. A detailed breakdown can be seen in the tables.

Recommendations:

1. Conduct aerial surveys once a month rather than bi-monthly. This would give more time for a more complete survey of the state.
2. Estimate use of refuges by waterfowl before, during and after the season.
3. Continue offshore surveys of scaup to get a better estimate of the population.
4. Change from line transect method through known areas of duck concentrations to total count method of these areas.
5. Use the Cessna 210 for all surveys.

Objectives:

1. Provide periodic estimates of the state waterfowl pop-

ulation for public information.

2. Provide estimates of waterfowl day use on state refuges and public shooting grounds.
3. Continue the exploration of offshore areas to improve present estimates of the scaup populations wintering in Louisiana waters.
4. Explore methods to verify estimate counts of waterfowl.

niques
l: Used line transects as described in the Louisiana Waterfowl Population Study Final Report, July 1949-June 1961. All marsh flights were made by the Cessna 210 landplane.

ings: See tables and discussion on back of tables.

ared by:
Clark M. Hoffpauer
Waterfowl Study Leader

Approved by:
Robert E. Murry
Project Leader

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ODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

E OF COVERAGE: Total Count and Transect

DATE: September 24, 25 & 27, 1964

REPORTED BY: Clark M. Hoffpauer

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
lard						
ck Duck						
wall		2,000	1,500			3,500
lpate	500	12,000	2,500	200	100	15,300
en W. Teal	8,000	2,000	1,500	200	100	11,800
le W. Teal	86,000	53,000	12,000	2,000	1,000	154,000
veler	3,000	12,000	3,500	50		18,550
tail	23,000	17,000	18,000	100	200	58,300
d Duck			sed			
tled Duck	8,000	22,000				30,000
head						
vasback						
up						
gneck						
dy						
ganser						
AL	128,500	120,000	39,300	2,550	1,400	291,750
ada Geese						
tefront G.						
e & w Geese						
AL						
ts						

[illegible]: See back.

This is the first complete winter waterfowl inventory conducted in Louisiana for 1964-65 season. A preliminary survey was made on a look-see basis on the 5th, 6th and 7th of September and it is the opinion of the pilot and observer that there were more ducks in Louisiana during the first two weeks in September than there were during the latter part when this survey was conducted. It is expected that these ducks moved on to Mexico or the Texas coast. The two most prevalent species were blue-winged teal and pintail.

The coastal marsh at this time has plenty of food and water to sustain a wintering population of waterfowl. However, there are less annual grass type feeds than last year.

Ducks at this time of the year are still in large concentrations and have not dispersed. The rice field area above the Southwest Louisiana marshes hold some of these concentrations.

Clark M. Hoffpauer,
Waterfowl Study Leader

IODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

OF COVERAGE Aerial Transect and Total Count

DATE: Oct. 6, 7, 8 & 9, 1964

REPORTED BY: Clark M. Hoffpauer

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
lard	500	500	500	0	0	1,500
ck Duck	0	0	0	0	0	0
wall	26,000	88,000	2,500	100	0	116,600
dpate	108,000	54,000	7,500	200	100	169,800
en W. Teal	41,000	26,000	2,000	700	Tr.	69,700
e W. Teal	117,000	129,000	5,000	2,000	750	253,750
veler	33,000	43,000	2,500	300	100	78,900
tail	67,000	24,000	25,000	1,800	500	118,300
d Duck	*	*	*	*	*	*
tled Duck	27,000	19,000	0	0	0	46,000
head	0	0	0	0	0	0
vasback	0	0	0	0	0	0
up	0	0	0	0	0	0
gneck	0	0	0	0	0	0
dy	0	0	0	0	0	0
ganser	0	0	0	0	0	0
AL	419,500	383,500	45,000	5,100	1,450	854,550
ada Geese	*	*	*	*	*	*
tefront G.	*	*	*	*	*	*
e & w Geese	*	*	*	*	*	*
AL						
ts	29,000	53,000	5,000	500	1,000	88,500

Not censused

marks: See back.

The total number of ducks are about the same as last year although considerable variation in species composition was noted. The migration of baldpate, gadwall, pintail, shoveler and green-winged teal is a few days earlier than last year. One factor that may have caused this is the very strong cold fronts and north winds preceding and during Hurricane Hilda. These north winds were as high as 90 miles per hour in some areas and winds up to 30 miles per hour lasted for several days.

The hurricane had very little effect on the marsh as compared to other storms. Very little of the marsh was flooded by storm tides. The portion that was flooded may receive a beneficial effect by the salt water killing some of the dense stands of Panicum hemitomon. This in turn would open up the area to more plants suitable for waterfowl use. Some of the woody plants and shrubs were scalded by salt spray. Most of the aquatics in the ponds remained unchanged.

Clark M. Hoffpauer,
Waterfowl Biologist

PERIODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

TYPE OF COVERAGE: Aerial Transect and Total Count DATE: October 26,27,& 28, 1964

REPORTED BY: Clark M. Hoffpauer

Population Estimates by Zones, Areas or Other Units
Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
Mallard	19,000	13,800	1,500	225	0	34,525
Black Duck	0	0	0	0	0	0
Gadwell	170,000	151,000	4.500	1,400	3,500	330,400
Baldpate	142,000	90,000	4,500	350	1,000	237,850
Green W. Teal	141,000	58,000	25,000	2,500	400	226,900
Blue W. Teal	65,000	52,000	9,500	250	0	126,750
Shoveler	47,000	60,000	11,000	200	0	118,200
Pintail	182,000	70,000	20,000	275	0	272,275
Wood Duck			Net Census			
Mottled Duck	12,000	26,000	0	0	0	38,000
Redhead	0	0	0	10	0	10
Canyaback	0	0	0	5	0	5
Scaup	500	1,500	0	750	0	2,750
Ringneck	12,000	250	0	1,050	0	13,300
Ruddy	0	0	0	0	0	0
Merganser	0	100	0	0	0	100
TOTAL	790,500	522,650	76,000	7,015	4,900	1,401,065
Canada Geese						
Blue & Snow Geese						
TOTAL						
Coots	119,220	92,000	3,500	5,700	7,500	227,920

Remarks: See Back.

Large numbers of waterfowl are moving into the state at this time. Mallards are not numerous, but flights are expected to increase with the first few cold waves in November. The opening of duck season should see good populations of ducks and geese in the state.

Blue and Snow Geese are moving into the Louisiana marshes, but since these species have not been adequately censused, no figures are given in this report.

PERIODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

TYPE OF COVERAGE: Aerial Transect and Total Count DATE: November 9, 10, 11 & 12, 1964

REPORTED BY: Clark M. Hoffpauer

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
Mallard	48,000	15,000	2,500	1,700	1,000	68,200
lack Duck	0	0	200	100	150	450
adwall	211,000	163,000	7,000	2,000	3,000	386,000
aldpate	187,000	145,000	9,000	2,500	2,500	346,000
reen W. Teal	175,000	73,000	27,000	1,000	1,000	277,000
e W. Teal	80,000	60,000	1,200	500	500	142,200
veler	41,000	42,000	10,000	500	1,000	94,500
tail	205,000	119,000	23,000	500	500	348,000
d Duck	*	*	*	*	*	*
tled Duck	18,000	23,000	0	0	0	41,000
head	100	500	0	0	0	600
vasback	0	0	0	0	0	0
up	23,000	262,000	1,000	1,000	1,000	288,000
gneck	21,000	4,000	3,500	1,500	200	30,200
dy	75	100	0	0	0	175
ganser	400	500	0	0	0	900
AL	1,009,575	907,100	84,400	11,300	10,850	2,023,225
ada Geese						
efront G.						
& Geese						
L						
s	185,000	200,000	21,000	17,000	8,000	431,000

* Censused

Remarks: See Back.

Gadwall, Widgeon and pintail were the most plentiful ducks in Louisiana at the time this inventory was made, but scaup began arriving in what appears to be a massive influx. During the recent mild weather they have remained mostly on the big lakes and out in the gulf.

The same cold weather that will bring more scaup and other ducks into Louisiana should mark the start of large mallard flights. Unseasonable mild weather which prevailed in lower Canada and throughout the flyway has been broken and large flights of ducks are expected to move southward, probably arriving in great numbers as the Louisiana duck season opens.

The coot population, well over 400,000, is widely scattered over the state, with largest concentrations in Southeast Louisiana. The next most populous area is Southwest Louisiana, followed by central area of the state.

No survey figures for geese are given in this inventory because periodic head counts of geese are made by the U. S. Fish and Wildlife Service. However, in making the duck inventory, state observers report well over 300,000 snow and blue geese. Also, white-fronted geese appear to be in greater numbers this year than in several years.

PERIODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

TYPE OF COVERAGE: Aerial Transect and Total Count

Date: November 23, 25, 26 & 27, 1964

REPORTED BY: Clark M. Hoffpauer

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
Mallard	292,000	84,000	30,000	8,000	5,000	419,000
Black Duck	1,000	1,000	2,800	3,000	1,000	8,800
Gadwall	560,000	410,000	8,000	2,000	2,000	982,000
Baldpate	258,000	203,000	2,500	1,500	1,000	466,000
G. W. Teal	346,000	98,000	21,000	11,000	4,000	480,000
B. W. Teal	72,000	48,000	2,500	2,000	1,000	125,500
Shoveler	81,000	73,000	10,000	2,000	1,000	167,000
Pintail	490,000	270,000	25,000	3,000	1,000	789,000
Wood Duck	*	*	*	*	*	*
Mottled Duck	19,000	30,000	0	0	0	49,000
Redhead	300	1,000	0	0	0	1,300
Canvasback	200	3,000	100	0	0	3,300
Scaup	75,000	260,000	1,000	1,000	1,000	338,000**
Ringneck	21,000	4,000	3,500	1,500	200	30,200
Ruddy	100	100	100	0	0	300
Merganser	500	5,000	0	0	0	5,500
TOTAL	2,216,100	1,490,100	106,500	35,000	17,200	3,864,900
Canada Geese						3,200
Whitefront G						40,000
B & S Geese						394,000
TOTAL						437,200***
Coots	210,000	312,000	20,000	15,000	6,000	563,000

* Wood ducks were not censused. The estimated population for Louisiana is 60,000.

** This figure only represents Lesser Scaup found in the coastal marshes and lakes. The offshore scaup census has not been taken.

*** The goose inventory was conducted by the U. S. Fish and Wildlife Service. The census figures are for the whole state and not broken down into specific areas.

COMMENT:

All ducks in the state increased with the exception of bluewinged teal which showed a slight decrease. Mallards have finally moved into the state in large numbers and are expected to increase.

DIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

OF COVERAGE: Total count & transect DATE: December 18-22, 1964

REPORTED BY: Clark M. Hoffpauir

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
lard	387,000	112,000	50,000	12,000	6,000	567,000
k Duck	2,000	3,000	2,000	3,500	1,000	11,500
all	612,000	480,000	8,000	3,000	2,000	1,105,000
pate	309,000	300,000	8,000	2,000	1,000	620,000
n W. Teal	415,000	106,000	12,000	10,000	4,000	547,000
W. Teal	61,000	39,000	1,000	1,000	1,000	103,000
eler	80,000	75,000	10,000	2,500	1,500	169,000
ail	496,000	290,000	65,000	4,000	1,500	856,500
Duck	*	*	*	*	*	*
led Duck	19,000	30,000	0	0	0	49,000
ead	500	1,000	0	0	0	1,500**
asback	500	6,000	2,500	200	0	9,200
p	140,000	260,000	1,000	9,000	1,000	411,000***
neck	21,000	4,000	5,000	2,000	200	32,200
y	500	500	100	300	100	1,500
anser	1,000	5,000	0	0	0	6,000
L	2,544,500	1,711,500	164,600	49,500	19,300	4,489,400
da Geese						3,200
efront G.	Goose inventory not broken down intc local areas. State totals only.					40,000
& Geese						394,000
L						437,200
s	220,000	312,000	25,000	16,000	6,000	579,000

Wood Ducks were not censused.

These figures represent the redheads found in the coastal marsh and lakes, the principle redhead area, the Chandeleur Islands, have not been censused.

This figure only represents Lesser Scaup found in the coastal marshes and lakes. The offshore scaup census has not been taken.

RIODIC WATERFOWL INVENTORY : MISSISSIPPI FLYWAY　　　STATE Louisiana

PE OF COVERAGE: Transect and Total Count　DATE: 3-9 January Mid-Winter

REPORTED BY: Hoffpauir, Sumerall and F&WS

Population Estimates by Zones, Areas or Other Units
Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
LLARD	422,000	160,000	31,500	25,000	12,500	651,000
ACK DUCK	1,000	3,000	1,000	1,000	1,000	7,000
DWALL	629,000	498,000	13,000	10,000	2,000	1,152,000
LDPATE	325,000	305,000	3,500	2,500	1,000	637,000
EEN W. TEAL	428,000	181,000	10,000	10,000	4,000	633,000
UE W. TEAL	57,000	32,000	2,000	2,000	1,000	94,000
OVELER	110,000	75,000	8,500	1,000	500	195,000
NTAIL	452,000	325,000	74,000	6,000	3,000	860,000
OD DUCK	18,000	9,000	27,000	25,000	45,000	124,000
TTLED DUCK	24,000	27,500	500	0	0	52,000
DHEAD	1,000	19,000	500	500	0	21,000
NVASBACK	500	12,000	4,000	500	0	17,000
AUP	116,000	209,000	13,000	3,000	3,000	344,000
NGNECK	9,500	5,000	60,000	6,000	75,000	88,000
DDY	5,000	500	3,000	10,000	0	14,000
RGANSER	3,000	7,000	0	0	0	10,000
TAL	2,596,500	1,868,000	251,500	102,500	80,500	4,899,000
NADA GEESE	6,965	50	100	0	0	7,115
ITEFRONT G.	33,225	100	450	0	0	33,775
UE & OW GEESE	311,390	69,130	13,700	0	0	394,220
TAL GEESE	351,580	69,280	14,250	0	0	435,110
OTS	1,782,075	205,000	6,000	2,000	6,000	2,001,075

emarks: See back.

The mid-winter inventory is conducted on a cooperative basis with the U. S. Fish and Wildlife Service. This year the aerial survey amounted to forty-two (42) hours flying and covered 4,000 miles. Two State personnel and six Fish and Wildlife Service personnel participated in the mid-winter waterfowl survey.

There was a slight increase in the mid-winter inventory over the December 18-22 count. One reason the numbers didn't increase greatly was due to the warm weather experienced by all states in the Mississippi Flyway. Usually at this time of the year the flyway has experienced a succession of cold waves that drive the ducks further south after a freeze-up. This year this didn't happen.

Lesser Scaup which have in the past brought our mid-winter count up a million ducks or more, did not appear in large numbers as they have in the past. It is expected that these ducks will show up off shore in late February.

Mallards, pintails, shovelers and blue-wing teal were down slightly. These birds are undoubtedly scattered up and down the flyway. Had inclimate weather occured, the count would have been much higher.

IODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

OF COVERAGE: Total Count and Transect DATE: 22-27 January

REPORTED BY: Clark Hoffpauir

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
lard	306,000	110,000	26,000	35,000	10,000	487,000
ck Duck	1,000	1,000	1,000	1,000	1,000	5,000
wall	562,000	432,000	10,000	9,000	4,000	1,017,000
dpate	280,000	300,000	2,500	2,500	1,000	586,000
en W. Teal	431,000	176,000	6,000	15,000	7,500	635,500
e W. Teal	63,000	46,000	4,000	4,000	2,000	119,000
veler	87,000	75,000	8,000	3,000	1,000	174,000
tail	412,000	284,000	75,000	8,000	6,000	785,000
d Duck	18,000	9,000	27,000	25,000	45,000	124,000
tled Duck	20,000	21,000	500	0	0	41,500
head	1,000	19,000	500	500	0	21,000
vasback	500	12,000	3,500	500	0	16,500
up	130,000	286,000	5,000	2,500	3,000	426,500
gneck	10,000	5,000	60,000	6,000	7,500	88,500
dy	5,000	500	2,000	8,000	0	15,500
ganser	3,000	7,000	0	0	0	10,000
AL	2,329,500	1,783,500	231,000	120,000	88,000	4,552,000
ada Geese	6,900	50	100	0	0	7,050
tefront G.	33,000	100	450	0	0	33,550
e & w Geese	311,000	69,000	14,000	0	0	394,000
AL	350,900	69,150	14,550	0	0	434,600
TS	1,780,000	205,000	6,000	2,000	6,000	1,999,000
nd Total all erfowl						6,985,600

marks: See back.

It is apparent when one looks at the total figures on this inventory that the waterfowl population has remained about the same as it was during the mid-winter inventory. This is misleading, because there has been a large exodus of waterfowl from the State. It can, therefore, be concluded that we greatly undercounted the ducks during the mid-winter inventory. It is felt by both observers of this inventory that the area North of the intracoastal canal was undercounted. It is a very large area and the populations were scattered, thus an underestimate could very easily occur.

Waterfowl during this current inventory did have a decrease. Most evident were the mallards. It is not improbable that these birds have moved North. Blue-wing Teal are now building up in the State, which is rather early for this occurence. The rest of the ducks seem fairly static and a big drop in population is not expected until mid or late February. The geese and coots have remained about the same.

The grand total for all waterfowl surveyed during this period was 6,985,600.

PERIODIC WATERFOWL INVENTORY: MISSISSIPPI FLYWAY STATE Louisiana

TYPE OF COVERAGE: Total Count & Transect Date: February 7, 8, 12

REPORTED BY: Clark M. Hoffpauer

Population Estimates by Zones, Areas or Other Units

Names of Areas

SPECIES	SOUTHWEST LOUISIANA	SOUTHEAST LOUISIANA	CENTRAL LOUISIANA	NORTHEAST LOUISIANA	NORTHWEST LOUISIANA	STATE TOTALS
Mallard	115,000	73,000	15,000	22,000	4,000	229,000
Black Duck	500	500	1,000	1,000	500	3,500
Gadwall	422,000	361,000	6,000	5,000	2,000	796,000
Baldpate	196,000	193,000	1,500	2,000	1,000	393,500
G.W. Teal	417,000	170,000	4,000	18,000	6,000	615,000
B. W. Teal	47,000	35,000	2,500	2,000	1,500	88,000
Shoveler	63,000	58,000	5,000	3,000	1,000	130,000
Pintail	229,000	197,000	60,000	6,000	5,000	497,000
Wood Duck	10,000	9,000	20,000	20,000	45,000	104,000
Mottled D.	20,000	21,000	500	0	0	41,500
Redhead	500	15,000	0	0	0	15,500
Canvasback	500	10,000	1,500	0	0	12,000
Scaup	130,000	286,000	1,500	2,500	1,500	421,500
Ringneck	10,000	5,000	75,000	4,000	4,000	98,000
Ruddy	2,000	500	2,000	2,000	0	6,500
Merganser	3,000	7,000	500	0	0	10,500
TOTAL	1,665,500	1,441,000	196,000	87,500	71,500	3,461,500
Canada Geese	6,400	50	100	0	0	7,050
Whitefront G.	33,000	100	450	0	0	33,550
Blue & Snow Geese	311,000	69,000	14,000	0	0	394,000
TOTAL	350,400	69,150	14,550	0	0	434,600
Coots	1,700,000	200,000	6,000	2,000	6,000	1,914,000

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN II

WATERFOWL STUDY

ate of: Louisiana

oject No. W-29-R-12 Name: Statewide Wildlife Investigations

b No.- 4 Title: Wood Duck Trapping and Banding

riod Covered: July 1, 1964 through June 30, 1965

stract: Two men were assigned to this project and banded 9 wood ducks.

commend-
ions: This project work load should be reassigned to other than district personnel due to the heavy work load already imposed. It is recommended that local labor or student labor be used on this project. Other states have used this method with the best of results. Louisiana used temporary personnel to trap ducks on Coulee Refuge several years ago and this was very successful.

jectives: To continue participation in the Cooperative Wood Duck Banding project in the Mississippi Flyway. A quota of 750 wood ducks was established for Louisiana last year.

chniques
ed: Float type box traps were used. Pre-baiting and baiting of traps continued throughout the program. All areas were flooded hardwood bottoms.

indings: A total of 9 wood ducks were banded by two men. Predation and water level fluctuation hampered the banding effort.

repared by:
Clark M. Hoffpauer
Waterfowl Study Leader

Approved by:
Robert E. Murry
Project Leader

ate________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN II

WATERFOWL STUDY

ate of: Louisiana

oject No. W-29-R-12 Name: Statewide Wildlife Investigations

b No. 6 Title: Cooperative Canadian Banding Operation

riod Covered: July 24, 1964 through September 10, 1964

stract: Louisiana participated in the Canadian Cooperative Project by providing one man for a crew that bait trapped and banded ducks in Southern Sasketchewan. The crew worked in the vicinity of Simpson on Last Mountain Lake and Lake Martin and a Ducks Unlimited project and banded 3,241 ducks between August 7 and September 5, 1964.

commend-ions: It is recommended to continue to develop techniques to trap and band ducks prior to the waterfowl season. The overall Cooperative Canadian Banding operation should be continued.

jectives: The overall objectives are: (1) to band diving ducks, nesting hens and free flying waterfowl prior to the hunting season; and (2) to utilize this information in conjunction with that gathered during the preceding eight years to provide more efficient management of the waterfowl resource. The objectives of the crew that the representative of the Louisiana Wildlife and Fisheries Commission was assigned was to a pre-season bait banding program.

echniques sed: Most waterfowl banding in Canada had previously been done by drive trapping crews. These crews require as many as 8 men and a great deal of equipment. During 1964 about 14 bait trapping and banding crews were assigned to various areas in Canada in an effort to determine the effectiveness of bait trapping. After arriving at the trap station the crew made surveys of the surrounding lakes in order to locate duck concentrations. The lakes selected were checked closely and trap sites located. The trap sites were heavily baited with wheat and barley for three days, then the traps were set. Box type traps measuring 8' x 5' by 5' high, 8' x 15' by 5' high, and 8' x 36' x 5' high were used during this operation.

indings: Ted Joanen represented Louisiana on the Cooperative Canadian waterfowl banding program in 1964. His report follows: "I left Louisiana on July 24 enroute to Regina, Saskatchewan, which was the rendevous point for all banding crews. We picked up the necessary equipment at Regina, then left for Watrous, Saskatchewan on July 31. We met Mr. Thomas Wright, Royal Canadian Mounted Policeman of Imperial, who assisted us in the location of suitable duck concentrations and by August 7 had set up the traps and caught the first ducks.

All banding, done by this crew, was done on Lake Martin which is a Ducks Unlimited Project and Last Mountain Lake. Lake Martin was trapped first and after August 20 we moved the entire operation to Last Mountain Lake.

During the 5 weeks of trapping, the two-man crew to which I was assigned banded over 3,241 ducks. The species composition of the catch is included in Table 1.

We terminated the assignment on September 4 and placed all equipment in storage in Regina. I returned to Louisiana on September 10."

The analysis of the band recovery data will be completed and reported by the U. S. Fish and Wildlife Service.

Prepared by:
Clark M. Hoffpauer
Waterfowl Study Leader

Approved by:
Robert E. Murry
Project Leader

Date______________

TABLE 1 - SPECIES AND AGE COMPOSITION OF DUCKS BANDED ON LAKE MARTIN AND LAST MOUNTAIN LAKE , SASKATCHEWAN, BETWEEN AUGUST 7 AND SEPTEMBER 4, 1964

Date	Mallard			Pintail			B.W. Teal			G.W. Teal			Widgeon			Red Head			Gadwall		
	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.
8-7-64	6	20	-	-	14	-	-	7	10	-	1	-	-	-	-	-	-	-	-	-	-
8-8-64	1	16	7	-	57	7	-	25	39	-	-	1	-	-	-	-	-	-	-	-	-
8-9-64	6	80	11	-	91	-	-	21	47	-	-	-	-	-	-	-	-	-	-	-	-
8-10-64	5	52	9	-	47	1	-	19	93	-	2	3	-	-	-	-	-	-	-	-	-
8-11-64	2	61	5	-	39	-	-	11	27	-	2	-	-	-	-	1	-	-	-	-	-
8-12-64	8	53	3	-	18	-	-	11	26	-	1	-	1	-	1	2	-	-	1	-	1
8-14-64	2	25	3	2	26	-	-	29	66	-	1	-	1	-	-	-	-	-	-	-	-
8-15-64	1	21	1	-	11	-	-	3	17	-	2	1	-	-	-	-	-	-	-	-	-
8-16-64	1	7	-	-	5	-	-	25	69	-	8	3	-	-	-	-	-	-	-	-	-
8-17-64	-	3	-	-	27	-	-	13	49	-	10	14	-	-	-	-	-	-	-	-	-
8-18-64	-	1	-	-	36	1	-	25	68	-	2	1	-	-	-	-	-	-	-	-	-
8-19-64	3	1	-	-	20	2	-	20	46	-	5	6	-	-	-	-	-	-	-	-	-
8-20-64	1	5	1	-	17	-	-	21	48	-	8	8	-	-	-	-	-	-	-	-	-
8-21-64	-	-	-	-	12	1	-	19	59	-	13	5	-	-	-	-	-	-	-	-	-

Date	Mallard			Pintail			B.W. Teal			G.W. Teal			Widgeon			Red Head			Gadwall		
	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.	L.	I.	M.
8-23-64	-	-	-	-	3	2	-	28	16	-	13	2	-	-	-	-	-	-	-	-	-
8-24-64	-	-	-	1	26	1	-	17	19	-	10	13	-	-	-	-	-	-	-	-	-
8-25-64	-	-	-	-	15	2	-	11	7	-	11	5	-	-	-	-	-	-	-	-	-
8-26-64	2	3	4	-	17	-	-	36	40	-	20	29	-	-	-	-	-	-	-	-	-
8-27-64	-	10	3	-	24	2	-	13	36	-	15	11	-	1	-	-	1	2	1	-	-
8-28-64	-	15	29	-	22	-	-	19	16	-	9	16	-	-	-	-	-	-	-	-	-
8-29-64	1	4	3	-	13	-	-	16	15	-	14	7	-	-	-	-	1	-	2	-	-
8-30-64	-	9	18	-	11	-	-	24	13	-	5	12	-	-	-	-	1	1	-	-	-
8-31-64	1	14	10	-	14	-	-	21	7	-	3	15	-	-	-	-	1	1	1	-	-
9-1-64	-	11	11	-	6	-	-	4	9	-	7	8	-	1	-	1	1	1	--	-	-
9-2-64	-	1	-	-	3	-	-	7	6	-	3	5	-	-	-	1	-	2	-	-	-
9-3-64	-	2	1	-	-	-	-	10	9	-	9	10	-	-	-	-	2	3	-	-	-
9-4-64	-	3	1	-	1	-	-	21	17	-	10	5	-	-	-	-	-	1	1	-	-

L. - Local
I. - Imature
M. - Mature

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN II

WATERFOWL STUDY

State of: Louisiana

Project No. W-29-R-12 Name: Statewide Wildlife Investigations

Job No. 7 Title: Cooperation with Mississippi Flyway Council Technical Section

Period Covered: July 1, 1964 through June 30, 1965

The waterfowl study leader cooperated with the Mississippi Flyway Council Technical Section on all assignments which are the regulation study committee and the hunting club survey. The study leader also served as secretary-treasurer to the Mississippi Flyway Council this year.

Prepared by:
Clark M. Hoffpauer
Waterfowl Study Leader

Approved by:
Robert E. Murry
Project Leader

Date______________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN II

WATERFOWL STUDY

State of: Louisiana

Project No. W-29R-12 Name: Statewide Wildlife Investigations

Job No. 9 Title: Evaluation of Physical Changes in Marsh Pônds on the Wisner and Biloxi Development Projects

Period Covered: July 1, 1964 through June 30, 1965

Abstract: This study was conducted only in the fall phase of October 1964. There was very little variance between October 1964 and October 1963 findings. All ponds sampled behind the weirs and earthen dams contained much more aquatic vegetation than the control ponds. The Wisner tract was not evaluated.

Recommendations: This study should be terminated or turned over to District VIII Supervisor, as data is of repetitive nature.

Objectives:

1. Record the number, type, and location of structures and earth dams on the study areas and determine the acreage influence by the improvements.
2. Investigate the physical and vegative changes in the marsh ponds resulting from the improvements erected on the area.

Techniques Used: The location and date of construction for each structure and earthen dam erected on the Wisner and Biloxi areas were obtained from Robert Beter, Supervisor of District VIII. All weir locations and study ponds were the same as last year. More detailed maps of most study ponds and structures are attached to Project W-29-R-7, Work Plan II, Job No. 10. The techniques used to investigate physical and vegetative changes in the study ponds were those described in the completion reports for Job. No. 10, Work Plan II, of Project W-29R-7 and 8.

Findings: On October 14, 15th, and 16th samples were taken in the Biloxi marsh ponds and the following table illustrates these findings:

Ml. of vegetation per sample	Weir Ponds	Earthen Dam Ponds	Control Ponds
	22.4 ml.	44.7 ml.	5.1 ml.
Turbidity	-25.0 ppm	-25.0 ppm	60.0 ppm
Salities	3220 ppm	3856 ppm	4143 ppm

Vegetation in weir, earthen dam and control ponds on Biloxi marsh, October 1964, expressed in ml. per sample.

Ruppia maritima	22.4 ml.	43.4 ml.	5.1 ml.
Eleocharis sp.	0	1.3 ml.	0

Summary

It is evident from the above tables that the aquatic vegetation on the Biloxi weir and earthen dam ponds has increased very much and that there is no question that these weirs and earthen dams are beneficial to the Biloxi marsh tract.

Prepared by:	Approved by:
Clark M. Hoffpauer Waterfowl Study Leader	Robert E. Murry Project Leader

Date________________

JOB COMPLETITION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN II

WATERFOWL STUDY

State of: Louisiana

Project No. W-29-R-12 Name: Statewide Wildlife Investigations

Job No. 12 Title: Mottled Duck Transplant Study

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Forty-five mottled ducks have been transplanted this year. Collinston release has a predator problem.

Recommendations:

1. This study should be continued for another year.
2. Use only the George Franklin Farm for release site.
3. Make large release of at least 100 pinioned immature birds.

Objectives: This job is designed to evaluate the mottled duck as a transplant to permanent fresh water areas of up-state Louisiana.

Techniques Used: Class I and II broods and adults were transplanted in North Louisiana.

Findings: The release site at Collinston is an ideal habitat for these birds to nest. The area is located on the edge of a hardwood bottom and has good cover along the edges. There is sufficient animal and plant food to encourage nesting. No nests have been found and it is concluded

that there is a large predator problem in Northeast Louisiana for gound nesting ducks. Numerous raccoon, o'possum and skunk tracks were seen around the pond area and two dead o'possums were found in the immediate area of the birds.

To date thirty-two birds have been released at the Collinston site and only nine adults, 5 hens and 4 drakes, remain there now. It is therefore recommended that this site be abandoned, since the predator problem has become too great.

The George Franklin release site is located on Highway 80, 3 miles west of Holly Ridge. The exact area is the George Franklin home place which has a large pond and small bayou on it. The area is relatively free of predators because of control measures taken by the owner. A release was made this year and is as follows:

7 mated pinioned pair
12 class I young
23 class II young

To date all have survived. The mated pairs were released immediately and the class I and II broods were brooded for 3 weeks and then released. These birds are not pinioned.

repared by:	Approved by:
Clark M. Hoffpauer Waterfowl Study Leader	Robert E. Murry Project Leader

ate____________________

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
MOURNING DOVE STUDY
WORK PLAN III

State of Louisiana

Project No. W-29R-12 Name Statewide Wildlife Investigations

Job No. 1 Title: Population and Productivity

Period Covered: July 1, 1964 - June 30, 1965

Abstract: During the period July 1, 1964 through June 30, 1965 two census methods, the call-count and the random road count, were employed in an effort to determine trends in the statewide mourning dove population. The indexes obtained indicate a decrease in the 1965 statewide dove breeding population when compared to the previous year. The call-count survey indicates an 18.4% decrease in the number heard from the 1964 level. The average May-June random road count indicates a 16.3% decrease from the 1964 level at that time.

Recommendations: The census methods currently available have serious limitations; therefore, a continued comparison and evaluation of both the call-count and random road count are recommended in an effort to more effectively determine trends in the mourning dove population.

Objectives: This job was designed to provide an index to the mourning dove population. The size of the breeding population and a measure of production are needed to assist in the formulation of hunting regulations.

Techniques Used: During the period from July 1, 1964 and June 30, 1965, two census methods were employed in an effort to determine trends in the statewide mourning dove population. The call-count survey was conducted from May 20 through June 10, while the random road count data collected during year-round daylight travel in accordance with a set of operational procedures.

Findings: The call-count survey provides the only national population index presently available, but it furnishes an index to the breeding population only and does not serve as an indicator of production. The random road count, more properly called the haphazard road count, has the advantage of censusing production as well as the breeding population. Inspection of the statewide random road count data reveals a general downward trend in the dove population during the past year.

A decrease of 16.3% in the number of doves seen was evident during the May and June, 1965 random road count when compared to the same period in 1964. The call-count

reflects a decrease of 18.4% in the number of doves heard during the 1965 survey as revealed below.

Call-Count (May-June)
(Average No. per Route)

	1964	1965	Trend
No. Heard	15.8	12.9	18.4% decrease

Random Road Count
(Doves /100 Miles)

	1964	1965	
May-June	4.78	4.00	16.3% decrease

The random road count information (Table I) averaged approximately 17,000 miles per month, while the call-count survey (Table II) involved 19 randomly selected routes throughout the state.

Prepared by:	Approved by:
Lawrence D. Soileau Dove Study Leader	Robert E. Murry Project Leader

TABLE I

DOVE RANDOM ROAD COUNT

DISTRICT I

onth	Miles Traveled	Doves Recorded	No. Doves Per 100 Miles
uly, 1964	7,104	158	2.24
ugust	2,964	109	3.68
eptember	3,959	58	1.47
ctober	4,050	6	.15
ovember	4,426	12	.27
ecember	4,852	63	1.30
anuary, 1965	4,739	58	1.22
ebruary	2,782	21	.75
arch	4,064	27	.66
pril	4,181	58	1.39
ay	2,802	215	7.67
une	3,669	114	3.11

DISTRICT II

uly, 1964	5,065	93	1.84
ugust	3,528	73	2.07
eptember	4,608	202	4.38
ctober	3,077	36	1.17
ovember	*		
ecember	3,210	30	.93
anuary, 1965	1,849	14	.76
ebruary	3,312	17	.51
arch	2,018	0	.00
pril	1,229	4	.33
ay	2,164	100	4.62
une	1,979	30	1.52

No data

TABLE I (Con'd)

DOVE RANDOM ROAD COUNT

DISTRICT III

Month	Miles Traveled	Doves Recorded	No. Doves Per 100 Miles
July, 1964	6,435	233	3.62
August	4,024	129	3.21
September	3,802	156	4.10
October	2,088	69	3.30
November	1,717	35	2.04
December	2,947	47	1.59
January, 1965	6,720	107	1.59
February	5,270	161	3.06
March	3,164	103	3.26
April	4,625	150	3.24
May	3,731	154	4.13
June	6,732	161	2.39

DISTRICT IV

Month	Miles Traveled	Doves Recorded	No. Doves Per 100 Miles
July,1964	1,778	244	13.72
August	812	89	10.96
September	586	54	9.22
October	545	15	2.75
November	295	19	6.44
December	468	7	1.50
January, 1965	2,102	127	6.04
February	1,886	32	1.70
March	1,460	74	5.07
April	1,225	56	4.57
May	*		
June	459	102	22.22

* No data

TABLE I (Cont'd)

DOVE RANDOM ROAD COUNT

DISTRICT V

Month	Miles Traveled	Doves Recorded	No. Doves Per 100 Miles
July, 1964	2,701	148	5.48
August	1,719	205	11.93
September	1,874	108	5.76
October	2,454	52	2.12
November	1,550	59	3.81
December	1,992	46	2.31
January, 1965	4,294	67	1.56
February	3,028	54	1.78
March	3,058	70	2.29
April	1,686	107	6.35
May	2,288	154	6.73
June	2,759	158	5.73

DISTRICT VI

Month	Miles Traveled	Doves Recorded	No. Doves Per 100 Miles
July, 1964	1,753	39	2.22
August	2,261	80	3.54
September	2,115	24	1.13
October	1,275	15	1.18
November	737	18	2.44
December	634	25	3.94
January, 1965	2,305	34	1.48
February	1,246	30	2.41
March	1,723	35	2.03
April	2,948	25	.85
May	1,899	25	1.32
June	2,470	26	1.05

TABLE I (Cont'd)

DOVE RANDOM ROAD COUNT

DISTRICT VII

Month	Miles Traveled	Doves Recorded	No. of Doves Per 100 Miles
July, 1964	271	15	5.54
August	245	5	2.04
September	377	5	1.33
October	*		
November	*		
December	*		
January, 1965	*		
February	182	0	.00
March	152	0	.00
April	*		
May	*		
June	13	0	.00

DISTRICT VIII

Month	Miles Traveled	Doves Recorded	No. of Doves Per 100 Miles
July, 1964	905	8	.88
August	2,191	10	.46
September	1,596	9	.56
October	*		
November	*		
December	*		
January, 1965	2,319	0	.00
February	1,197	0	.00
March	*		
April	*		
May	*		
June	*		

* No data

TABLE I (Cont'd)

DOVE RANDOM ROAD COUNT

STATEWIDE

Month	Miles Traveled	Doves Recorded	No. Doves Per 100 Miles	1963-64 No. Doves Per 100 Miles
July, 1964	26,012	938	3.61	5.98
August	17,744	700	3.94	7.56
September	18,917	616	3.26	4.36
October	13,489	193	1.43	3.30
November	8,725	143	1.64	.87
December	14,103	218	1.55	1.23
January, 1965	24,328	407	1.67	1.50
February	18,903	315	1.67	1.90
March	15,639	309	1.98	2.33
April	15,894	400	2.52	5.04
May	12,884	648	5.03	5.43
June	18,081	591	3.27	3.98

TABLE II

CALL-COUNT ROUTES

COMPARISON OF 1964 and 1965 ROUTES

Route No.	No. of Doves Heard		No. of Doves Seen	
	1964	1965	1964	1965
86-R	14	20	12	44
90-R	22	18	32	12
94-R	55	63	36	25
105-R	38	29	46	11
110-R	28	12	24	12
121-R	23	19	12	2
121A-R	5	2	0	0
122-R	4	1	0	0
134-R	4	4	3	2
135-R	32	23	26	14
137-R	0	2	0	0
137A-R	15	4	47	21
167-R	11	11	2	9
198-R	14	12	4	2
202-R	7	0	2	0
216-R	8	2	1	0
217-R	1	0	1	2
228-R	14	15	15	27
243-R	5	9	4	0
TOTAL	300	246	267	183
Average Number Per Route	15.8	12.9	14.1	9.6

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT

WORK PLAN III

MOURNING DOVE STUDY

State of: Louisiana

Project No. W-29R-12 Name: Statewide Wildlife Investigations

Job No. Title: Dove Trapping and Banding

Period Covered: July 1, 1964 through June 30, 1965

Abstract: A total of 635 doves was banded in the state from July 1, 1964 through June 30, 1965.

Recommendations: Permanent trapping and banding stations should be operated as part of the national pre and post-season banding program. The pre-season banding period is defined as the period from June through August and the post-season period is from January through March. The state's quota is 2,000 doves during each period.

Objectives: This job was designed to band a large number of mourning doves in an effort to better understand migrational patterns and mortality factors.

Techniques Used: Trapping was done with baited wire box traps which were operated at permanent stations throughout the trapping season. The stations were baited continuously through the trapping season and the traps set and run once each week.

indings: The results of the trapping and banding program from July 1, 1964 through June 30, 1965, are included in Table III. A total of 635 doves was banded in the state.

repared by:
Larry Soileau
Dove Study Leader

Approved by:
Robert E. Murry
Project Leader

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TABLE III

Mourning Dove - Trapping and Banding
July 1, 1964 - June 30, 1965

Camp Claiborne, Alexandria

MONTH	NO. BANDED	ADULT	IMMATURE	TOTAL RETRAPS
July, 1964	101	33	68	49
August, 1964	43	16	27	40
January, 1965	1	1	0	0
February, 1965	6	6	0	0
March, 1965	51	51	0	42
June, 1965	124	93	31	83
TOTAL	326	200	126	214

DeRidder Air Base, DeRidder

MONTH	NO. BANDED	ADULT	IMMATURE	TOTAL RETRAPS
July, 1964	26	16	10	3
August, 1964	20	17	3	0
February, 1965	6	6	0	0
March, 1965	51	51	0	8
June, 1965	98	65	33	9
TOTAL	201	155	46	20

Selman Field, Monroe

MONTH	NO. BANDED	ADULT	IMMATURE	TOTAL RETRAPS
July, 1964	16	7	9	3
June, 1965	36	19	17	4
TOTAL	52	26	26	7

Bodcau G.M.A.

MONTH	NO. BANDED	ADULT	IMMATURE	TOTAL RETRAPS
June, 1965	22	9	13	1
TOTAL	22	9	13	1

Ferriday

MONTH	NO. BANDED	ADULT	IMMATURE	TOTAL RETRAPS
July, 1964	8	6	2	1
August, 1964	1	1	0	0
TOTAL	9	7	2	1

Rockefeller Refuge, Grand Chenier

MONTH	NO. BANDED	ADULT	IMMATURE	TOTAL RETRAPS
September, 1964	14	8	6	0
October, 1964	5	2	3	0
November, 1964	2	1	1	0
TOTAL	21	11	10	0

STATEWIDE TOTALS

Total No. Banded	Adult	Immature	Nestling	Total Retraps
635	408	223	4	243

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

MOURNING DOVE STUDY

WORK PLAN III

State of Louisiana

Project No. W-29R-12 Name: Statewide Wildlife Investigations

Job No. 3 Title: Dove Kill Estimation

Period Covered: July 1, 1964 - June 30, 1965

Abstract: An estimated total of 944,400 doves was killed in the state by persons residing in a household with a telephone. A total of 405,500 was killed during the first segment of the hunting season, 302,800 during the second and 236,100 during the third.

Recommendations: The telephone survey as a method of estimating dove harvest should be continued for one more year.

Objectives: This job was designed to provide an estimated index of statewide dove harvest during the three segments of the hunting season.

Techniques Used: A random sample of 3250 residential telephones was selected from the 672,000 residential telephones in the state by the Institute of Statistics, North Carolina State College. Selected telephone directories were secured and divided into the proper number of sampling units. Non-residential telephones were deleted from the selected

sample units in the directories. A random sample of residential subscribers within the sampling units was selected.

Individual questionaires were printed and the name and telephone number of each selected subscriber were placed on the appropiate questionaire. The questions asked during the telephone interview related to the number of dove hunting trips and kill of the subscriber and others residing in the household.

In order to interview by telephone the 3250 randomly selected subscribers, statewide wats telephone service was obtained. This service enabled all telephone interviews to be made from the Baton Rouge office by one operator. One-third of the selected sample was called immediately at the close of each segment of the hunting season and questioned concerning their dove hunting trips and kill during the season segment just completed.

Findings: Telephone interviews revealed that an estimated total of 944,400 doves was killed in the state by persons residing in a household with a telephone. This kill was distributed among the three segments of the hunted season as indicated on the following page:

ESTIMATES FROM DOVE HUNTERS

RESIDING IN HOUSEHOLDS WITH A TELEPHONE

1964-65 Hunting Season

Hunting Season Segment	Estimated Hunters	Estimated Trips	Estimated Kill
Sept. 5-20	61,800	147,100	405,500
Oct. 17-Nov.8	24,700	78,200	302,800
Dec. 5-Jan.4	24,600	58,500	236,100

Prepared by:
Lawrence D. Soileau
Dove Study Leader

Approved by:
Robert E. Murry
Project Leader

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

MOURNING DOVE STUDY

WORK PLAN III

State of Louisiana

Project No. W-29R-12 Name Statewide Wildlife Investigations

Job No. 4 Title: Dove Banding Analysis

Period Covered: July 1, 1964 through June 30, 1965

No work was accomplished on this job. The Institute of Statistics, North Carolina State College has been unable to find personnel to complete this job; therefore, it is recommended that the job be changed so that dove banding and recovery information be tabulated by personnel of Project FW-2R under the direction of the Dove Study Leader.

Prepared by:
Lawrence D. Soileau
Dove Study Leader

Approved by:
Robert E. Murry
Project Leader

Date ______________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

RABBIT INVESTIGATIONS

WORK PLAN V

State of Louisiana

Project No. W-29R-12 Name: Statewide Wildlife Investigations

Job No.: 1 Title: Population Trends by Random Road Counts

Period Covered: July 1, 1964 - June 30, 1965

Abstract: The annual index figure which is based on the number of rabbits observed per 100 miles of random daylight travel was 0.52 for the period covered in this report. This figure was an overall statewide average obtained from 205,868 miles of travel in the eight geographical districts. During the five preceding study years the average was 0.55, 0.63, 0.66, 0.69, and 0.70 respectively.

Recommendations: This job is designed primarily to provide simple indices to the rabbit population. Although it has serious limitations the job should be continued in its present form. A backlog of information gathered by this method is available for comparison. Also, comparisons can be made between this and other phases of the rabbit project. It is a job that is performed by biologists while conducting routine duties; hence, very few man days are necessary for the fulfillment

of this job.

Objectives: A better understanding of seasonal and annual fluctuations in rabbit numbers is desirable for management planning. This job is designed to determine population or activity trends of rabbits throughout the state.

Techniques Used: This is a year-round job that is performed while conducting routine duties in the various districts. Data are collected and analyzed on a district basis. The work is assigned to all biologists and other designated personnel of the Pittman-Robertson Section of the Fish and Game Division. This includes district supervisors, district biologists, project Leaders, study leaders and biological aides. Method used to obtain the data is as follows: When traveling to perform routine duties the driver of the vehicle records the number of dead and alive rabbits observed. The speedometer reading is recorded at the beginning and completion of each trip. This information is kept only during daylight hours and by day, month, and year. Random road count data are mailed to the Study Leader at the end of each month.

Findings: Table I through IV show results of the random road counts by district for the period July, 1964 through June, 1965. Table V presents the statewide random road count on a monthly and annual basis.

District I is located in northwest Louisiana. It is comprised of the following parishes: Caddo, Bossier, Webster, Claiborne, DeSoto, Red River, and Bienville. Table I shows a total of 49,545 miles of random daylight travel logged during the twelve month period. The number of rabbits recorded per 100 miles of travel was 0.26, the previous year figure was 0.40. In 1962-63 it was 0.54, 0.49 in 1961-62 and 0.45 in 1960-61, but in 1959-60 the figure was 0.14.

The parishes of Union, Morehouse, West Carroll, East Carroll, Richland, Ouachita, Lincoln, and Jackson comprise District II which is in northeast Louisiana. In this district 33,402 miles of random travel were recorded during the year. The number of rabbits recorded for each 100 miles of travel was 0.45. For the previous year the figure was 0.85. In 1962-63 it was 0.91 and in 1961-62 the figure was 1.22. In 1960-61 the figure was 1.19.

District III is made up of six parishes in central and west-central Louisiana. They are Winn, Grant, Rapides, Natchitoches, Sabine, and Vernon. For this district the total number of random miles logged was 51,633 and the average number of rabbits recorded for each 100 miles of travel was 0.77. During the previous year the figure was 0.61. Two years prior to this it was 0.62. In 1961-62 it was 0.71.

District IV is comprised of Franklin, Caldwell, LaSalle, Catahoula, Madison, Tensas, and Concordia. It is located in east-central Louisiana. A total of 10,503 random miles was recorded during the period covered in this report. The average number of rabbits tallied per 100 miles of travel was 0.48. Over the previous twelve month period a figure of 0.36 was recorded. In 1962-63 it was 0.32 and in 1961-62 it was 0.42.

The following parishes in southwest Louisiana make up District V: Beauregard, Allen, Evangeline, Jeff Davis, Acadia, Calcasieu, Cameron, and Vermilion. The period covered in this report showed 28,525 miles logged. In this district the average number of rabbits recorded per 100 miles was 0.75. This figure is about the same as the previous one which was 0.73. For the two years prior to that figure was 0.63 and 0.81, respectively.

Seven parishes in south-central Louisiana are in District VI. It is comprised of Avoyelles, St. Landry, Pointe Coupee, St. Martin, Lafayette, West Baton Rouge and Iberville. A total of 21,749 miles of random travel was recorded during the twelve month period. For each 100 miles of travel the average number of rabbits recorded was 0.45. During the previous study period the figure was 0.52. In 1962-63 it

was 0.66 and 0.88 in 1961-62.

District VII comprises nine parishes in southeast Louisiana. They are East Feliciana, West Feliciana, St. Helena, Tangipahoa, Washington, St.Tammany, Livingtson, East Baton Rouge, and Ascension. Randomly traveled miles recorded in this district during the twelve month period amounted to 1,240. The average number of rabbits recorded per 100 miles of travel was 0.24. In 1963-64 the figure was 0.57. For the three study years previous to this the figure was 0.51, 0.27, and 0.20 respectively.

District VIII comprises the remaining parishes of which most are located along the coast in southeast Louisiana. During the twelve month period 9,271 random miles were logged. The average number of rabbits recorded per 100 miles of travel was 0.24. For the previous year the figure was 0.04.

In conclusion, the rabbit random road counts were conducted in each of the eight districts during the period covered in this report, July 1, 1964 to June 30, 1965. The data collected were collected froma total of 205,868 randomly traveled miles during the study period. For the eight districts the overall average number of dead and

alive rabbits recorded for each 100 miles of travel was 0.52. See Table V. Over the previous five years of study it was 0.55, 0.63, 0.66, 0.69, and 0.70, respectively.

Prepared by:
Jack O. Collins
Rabbit Study Leader

Approved by:
Robert E. Murry
Project Leader

Date:__________________

TABLE I

ANNUAL RABBIT RANDOM ROAD COUNTS BY DISTRICTS

DISTRICT I

Month	No. Miles Traveled	Rabbits Recorded			No. Rabbits Recorded Per 100 Miles of Travel
		Dead	Alive	Total	
July, 1964	7104	5	17	22	0.31
August	2964	0	7	7	0.24
September	3961	0	0	0	0.00
October	4050	4	1	5	0.12
November	4426	4	0	4	0.09
December	4852	4	0	4	0.08
January, 1965	4740	11	0	11	0.23
February	2782	16	0	16	0.58
March	4014	5	1	6	0.15
April	4181	14	2	16	0.38
May	2802	2	16	18	0.64
June	3669	4	18	22	0.59
TOTALS	49545	69	62	131	0.26
DISTRICT II					
July, 1964	5065	12	10	22	0.43
August	3528	7	3	10	0.28
September	4231	6	1	7	0.17
October	3499	7	1	8	0.23
November	-	-	-	-	-
December	3210	30	1	31	0.97
January, 1965	3167	13	0	13	0.41
February	3312	17	0	17	0.51
March	2018	2	0	2	0.10
April	1229	1	0	1	0.08
May	2164	11	8	19	0.88
June	1979	9	10	19	0.96
TOTALS	33402	115	34	149	0.45

TABLE II

ANNUAL RABBIT RANDOM ROAD COUNTS BY DISTRICTS

DISTRICT III

Month	No. Miles Traveled	Rabbits Recorded			No. Rabbits Recorded Per 100 Miles of Travel
		Dead	Alive	Total	
July, 1964	5810	15	1	16	0.28
August	4024	7	0	7	0.17
September	4180	8	0	8	0.19
October	2713	12	2	14	0.52
November	1717	14	0	14	0.82
December	2947	51	0	51	1.73
January, 1965	6720	117	0	117	1.74
February	5270	63	0	63	1.20
March	3164	33	0	33	1.04
April	4625	32	1	33	0.71
May	3731	18	5	23	0.62
June	6732	17	4	21	0.31
TOTALS	51633	387	13	400	0.77

DISTRICT IV

Month	No. Miles Traveled	Rabbits Recorded			No. Rabbits Recorded Per 100 Miles of Travel
		Dead	Alive	Total	
July, 1964	1778	2	0	2	0.11
August	812	2	2	4	0.49
September	586	0	0	0	0.00
October	545	0	0	0	0.00
November	295	2	1	3	1.02
December	86	1	0	1	1.16
January, 1965	2102	10	0	10	0.48
February	853	14	1	15	1.75
March	2359	8	3	11	0.47
April	1001	2	0	2	0.20
May	-	-	-	-	-
June	86	2	0	2	2.33
TOTALS	10503	43	7	50	0.48

TABLE III

ANNUAL RABBIT RANDOM ROAD COUNTS BY DISTRICTS

DISTRICT V

Month	No. Miles Traveled	Rabbits Recorded Dead	Alive	Total	No. Rabbits Recorded Per 100 Miles of Travel
July, 1964	2701	2	27	29	1.07
August	1719	1	3	4	0.23
September	1874	3	0	3	0.16
October	2454	8	1	9	0.37
November	1550	19	0	19	1.23
December	1992	8	0	8	0.40
January, 1965	3416	39	0	39	1.14
February	3028	15	1	16	0.53
March	3058	8	1	9	0.29
April	1686	10	15	25	1.48
May	2288	8	13	21	0.92
June	2759	7	24	31	1.12
TOTALS	28525	128	85	213	0.75

DISTRICT VI

July, 1964	1753	1	1	2	0.11
August	2261	3	1	4	0.18
September	2115	1	1	2	0.09
October	1804	9	2	11	0.61
November	737	8	1	9	1.22
December	694	10	0	10	1.44
January, 1965	2099	17	0	17	0.81
February	1246	9	0	9	0.72
March	1723	11	2	13	0.75
April	2948	4	2	6	0.20
May	1899	8	1	9	0.47
June	2470	4	3	7	0.28
TOTALS	21749	85	14	99	0.45

TABLE IV

ANNUAL RABBIT RANDOM ROAD COUNTS BY DISTRICTS

DISTRICT VII

Month	No. Miles Traveled	Rabbits Recorded			No. Rabbits Recorded Per 100 Miles of Travel
		Dead	Alive	Total	
July, 1964	271	0	0	0	0.00
August	245	0	0	0	0.00
September	377	1	0	1	0.27
October	-	-	-	-	-
November	-	-	-	-	-
December	-	-	-	-	-
January, 1965	-	-	-	-	-
February	182	2	0	2	1.10
March	152	0	0	0	0.00
April	-	-	-	-	-
May	-	-	-	-	-
June	13	0	0	0	0.00
TOTALS	1240	3	0	3	0.24

DISTRICT VIII

Month	No. Miles Traveled	Dead	Alive	Total	No. Rabbits Recorded Per 100 Miles of Travel
July, 1964	905	0	0	0	0.00
August	2191	1	0	1	0.05
September	2659	0	1	1	0.04
October	-	-	-	-	-
November	-	-	-	-	-
December	-	-	-	-	-
January, 1965	2319	6	0	6	0.26
February	1197	13	1	14	1.17
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
TOTALS	9271	20	2	22	0.24

TABLE V

ANNUAL RABBIT RANDOM ROAD COUNTS BY DISTRICTS

Month	No. Miles Traveled	Statewide Rabbits Recorded Dead	Statewide Rabbits Recorded Alive	Total	No. Rabbits Recorded Per 100 Miles of Travel
July, 1964	25387	37	56	93	0.37
August	17744	21	16	37	0.21
September	19983	19	3	22	0.11
October	15065	40	7	47	0.31
November	8725	47	2	49	0.56
December	13781	104	1	105	0.76
January, 1965	24563	213	0	213	0.86
February	17870	149	3	152	0.85
March	16488	67	7	74	0.45
April	15670	63	20	83	0.53
May	12884	47	43	90	0.70
June	17708	43	59	102	0.58
TOTALS	205868	850	217	1067	

Overall Average 0.52

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
RABBIT INVESTIGATIONS
WORK PLAN V

State of Louisiana

Project No.: W-29R-12 Name: Statewide Wildlife Investigations

Job No.: 3 Title: Rabbit Trapping and Tagging

Period Covered: July 1, 1964 to June 30, 1965

Abstract:

This job which was designed to experiment with trapping techniques and to gather data on factors influencing trapping success was conducted on the Thistlethwaite Game Management Area in St. Landry Parish. It is primarily Swamp Rabbit (*Sylvilagus aquaticus*) habitat.

Fifty-two animals were trapped during the period specified above. Of these 23 were rabbits.

Experimental trapping was restricted to a baitless technique that involved wire wing extensions on each side of a 1" x 2" weld wire trap 9"x 10" x 36".

Recommendations:

Further experimenting with the baitless trapping technique for the purposes of improving certain procedures and methods of operation is recommended.

Objectives: 1. To experiment with trapping techniques; 2. To gather data on factors influencing trapping success, and 3. to determine cruising radius, and longevity of marked animals.

Techniques used: Traps constructed of 1" x 2" fourteen guage weld wire were used. Wire wings made of 20 guage poultry wire and held erect by three foot long bamboo poles extended from fifteen to thirty feet on both sides of the trap. Wings were two feet high and both 1" and 2" mesh sizes were employed. At the end of each wing there was an approximate 45 degree angle in the fence. A trap was placed at each angle in the fence which contained from one to ten traps. Thus, it may be described as a zig zag trapping technique. After initial September trapping in which 90 traps were used only 60 traps were available to the study.

All traps were left open on both ends except during trapping periods.

No bait was employed.

During trapping periods of from one to four days all traps were left set, but daily inspection of each trap was made. On final trapping day all

doors were tied open.

Some trap sites were randomly selected, but others were used because of ease of access and less cattle usage on a particular area.

All rabbits trapped were tagged in each ear and released immediatley after catch.

All animals other than rabbits were killed immediately before or after removal from trap. Consequently, there were no repeat catches on any animals but rabbits.

Findings: Table I shows results of trapping on the Thistlethwaite Game Management Area between September 2, 1964 and April 23, 1965.

In mid-August, 1964 a total of 94 traps was placed on 12 different trap sites. Eighty-five traps were set on September 1, 1964. Six swamp rabbits and two O'possums (Didelphis virginiana) were trapped. Of the six rabbits, one was killed in trap before daylight apparently by a raccoon (Procyon lotor). Two of the remaining five died from over-exposure to heat in traps. Seventy-five traps were left set and inspected the following morning, September 3. Total catch amounted to four swamp rabbits, three o'possums, one raccoon, and three armadillos (Dasypus novemcinctus).

On October 28, 1964 one trap line that was comprised of eight traps was set for the purpose of determining the effects of an extermely high mosquito population on rabbits in an open trap. One swamp rabbit was caught, and it showed no ill effects due to mosquitoes. In order to expand the test a second trap line was set on October 29. In fifteen traps that were set one additional rabbit was caught. Apparently, it was not affected by the heavy mosquito infestation.

During the first week in December, 1964 new trap sites were selected and zig zag fences were placed at locations. Fifty-six traps were set on December 14, and sixty were set on each of the following two nights. In the 174 traps set a total of nine animals was trapped. This included four rabbits, one skunk (*Mephitis mephitis*), one armadillo, and three o'possums. See Table I.

Over the three night period, January 5, 6, and 7, 1965, 30, 54, and 51 traps, respectively, were set. Site selection and trap placement was made on January 5, 1965. Results of trap catch were as follows: two swamp rabbits, three o'possums, five skunks, and one armadillo. Both rabbits were caught on the third night that traps were set. Although not killed, one of the rabbits was phy-

sically damaged by feral dogs on the area. Skin was torn and bleeding was in evidence.

Fifty-four traps were set on the afternoon of January 20 and left set until January 22, 1965. Thus, 108 catches were possible over the two night period. Total catch was two swamp rabbits and five o'possums. Both rabbits were caught along trap lines inside woods. In most instances trapping success is best in openings adjacent to woods.

Fifteen traps were set on previously untrapped sites on April 9, 1965. No animals were trapped. Traps were wired open until April 12 when they were reset. On this occasion two swamp rabbits were trapped.

On April 14, 23 traps were set, but no animals were trapped.

Fourteen traps were set on April 15. These were at different sites from those set on previous nights. One swamp rabbit was caught.

A one night trapping effort was made on April 19. Eight traps were set at a new site. Total catch was one skunk.

The last trapping effort prior to this report was on three consecutive nights, April 21, 22, and 23. Twenty-three traps were set on each occasion. One armadillo, one

skunk, and one o'possum were trapped during the three trapping efforts. All three animals were caught at a site where trap line and fence was unmolested by cattle for a three day period.

By using the baitless trapping technique with the zig zag wire wings the problem of catching large numbers of wood rats was eliminated. Some o'possums and other animals were caught, but competition for trap use was reduced to a large degree when comparing box trapping with bait and the baitless method.

Over the entire period of trapping experimentation trap success amounted to one animal caught for every fourteen trap sets. One swamp rabbit was caught for every 32 trap sets.

Some limitations and problems that need further study are as follows: 1. Ability to transport equipment (wire, traps, and stakes) from place to place. Labor costs thus far have been fairly high, but it is probable that use of a two wheel utility trailer will elminate this problem to some degree. 2. About 500 cattle range on the area where trapping operations are conducted. These animals constantly damage the wire wing extensions of fences. As a result frequent repairs are necessary. 3. Trigger

always needs repair after animal is caught in trap. Some further modification is necessary. 4. Fence heights - more comparison between 2' and 3' high wire is necessary. 5. Trap door sizeneeds some alteration. It is probable that rabbits would go through the entrance more readily if the hole were larger. 6. Eradication of weeds and grass at trap sites and along fences would be beneficial. Testing with certain chemical solutions is recommended.

In conclusion, experimental trapping by use of the baitless technique needs further refinement and should be continued for at least one more year.

Prepared by:
Jack O. Collins
Rabbit Study Leader

Approved by:
Robert E. Murry
Project Leader

Date: ____________________

TABLE I

Results of Rabbit Trapping on the Thistlethwaite Game Management Area- July 1, 1964-June 30, 1965

Date of Trapping	No. of Traps Set	No. Swamp Rabbits Caught		Other Animals Caught		Weather Conditions
		New	Repeat	Species	Number	
9-2-64	85	6	0	o'possum	2	Very hot dry night, 90degrees F, 8 A. M.Clear
9-3-65	75	4	0	Armadillo O'possum Raccoon	3 1 1	Clear and hot all night, 90 degrees F,8 A.M
10-29-64	8	1	0	0		58 degrees F., cool-misty
10-30-64	15	1	0	0		60 degrees F., cool-misty
12-15-64	56	1	3	0		Clear & Cold, 30degrees F., heavy frost
12-16-64	60	0	0	Skunk	1	" " " Frost
12-17-64	60	0	0	O'possum Armadillo	3 1	" " " "
1-5-65	30	0	0	Armadillo O'possum Skunk	1 1 1	Partly cloudy, mild - 68 degrees F
1-6-65	54	0	0	Skunk	2	" " " - 66 degrees F.
1-7-65	51	2	0	Skunk O'possum	2 2	mild all evening, partly cloudy, 66 degrees F
1-21-65	54	2	0	O'possum	4	Partly cloudy, cool, 50 degrees F.
1-22-65	54	0	0	O'possum	1	Cloudy night 65 degrees F. humidity high-low barometric pressure
4-9-65	15	0	0	0	0	Partly cloudy, hot, 70 degrees F. in evening
4-13-65	15	2	0	0	0	Cloudy, hot, 70degrees F. in evening
4-14-65	23	0	0	0	0	Partly cloudy, hot, 70 degrees F. in evening
4-15-65	14	1	0	0	0	" " " " "
4-19-65	8	0	0	Skunk	1	Hail, lightning, ½" rain in evening 70 degreesF
4-22-65	23	0	0	0	0	Hot & Clear, 70 degrees F.
4-23-65	23	0	0	O'possum Armadillo	1	Hot & Clear, 70 degrees F

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

RABBIT INVESTIGATIONS

WORK PLAN V

State of Louisiana

Project No. W-29R-12 Name: Statewide Wildlife Investigations

Job No. 5 Title: Habitat Manipulation for Cotton-tail Rabbits

Period Covered: July 1, 1964 to June 30, 1965

Abstract: Some preliminary work relative to selection of site for study and planning was conducted, but fence construction was not started.

Recommendations: This job should be continued in its present form.

Objective: To investigate techniques for developing maximum cottontail populations through habitat alteration.

Techniques Used: Preliminary planning and intensive work toward the selection of a work location were major phases of the job conducted thus far.

Findings: None, except potential study sites were located.

Prepared by:	Approved by:
Jack O. Collins	Robert E. Murry
Rabbit Study Leader	Project Leader

Date: ________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

SQUIRREL STUDY

WORK PLAN VI

State of: Louisiana

Project No.: W-29R-12 Name: Statewide Wildlife Investigations

Job No.: 2 Title: Publication on Squirrel Research

Period Covered: July 1, 1964 - June 30, 1965

Abstract: Field data have been analyzed and presented in the job completion reports - squirrel trapping and tagging.

Recommendations: Continue the job until publication completed.

Objectives: To prepare a popular publication for distribution to interested citizens and sportsmen from squirrel data that has accumulated through through the years 1952-1965. The pamphlet will present facts and figures collected on fox and gray squirrels in Louisiana pertaining to life history, habits, population fluctuations and the effect that gunning has on the squirrel population.

Techniques Used: Collection of data from outlined research jobs.

Findings: To be presented in final form of publication.

Prepared by:
J. B. Kidd
District Supervisor

Approved by:
Robert E. Murry
Project Leader

Date

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

SQUIRREL STUDY

WORK PLAN VI

State of Louisiana

Project No.: W-29R-12 Name: Statewide Wildlife Investigations

Job No. 3 Title: Squirrel Trapping and Tagging

Period Covered: July 1, 1964 - June 30, 1965

The following report will present data collected from squirrel trapping, hunting, and tag returns during the years 1963-64 and will extend through the 1964-65 period up to and including data from the 1964 squirrel hunt.

Abstract: During two trapping periods in May and September, 1964 99 squirrels were marked and released. Hunters killed 18 of these during the October hunt of 1964 for an 18.2% return. The estimated population before fall hunting in 1964 computed from October tag returns is 21,288 squirrels. It has been further determined that the squirrel population between the end of hunting in 1963 and the beginning season in 1964 increased approximately 14,700 squirrels. After hunting in 1964 the remaining squirrel population was computed to be 17,800. The natural mortality that occurred from the remaining 1963 sample between the end of hunting in 1963 and beginning of

the season in 1964 has been determined as 40.5 percent. Hunters removed approximately 18.2 percent of the total population during October hunting in 1964.

Recommendations: This job is to be terminated after four years of work. Based on the four year study, the present season lengths and bag limits are in no way endangering future squirrel population. From tag return information hunters in 1962 removed the greatest percent of the fall population -40 percent.

In 1962 the Thistlethwaite Area was granted two separate hunting periods in an attempt to increase total kill on the area. In 1962 the second season was granted in December and the number of squirrels added was only 303 animals. It was also severely cold at this time which limited hunting. In 1963 and 1964 the second season was granted in November. It is noted in 1964 that the kill per hunter effort in November was equal to the average kill during the 1963 October hunt. The total kill added in 1964 during the November hunt was 563 animals. It is believed that a second season granted in November will add materially to the total kill during years of high squirrel population. It is therefore recommended that this practice be continued in the future.

Objectives: To determine the percent of the squirrel population harvested by hunters, to determine population turnover and recruitment rate.

Techniques Used: The following method was used to locate 20 trap lines randomly with 10 traps in each line during the 1963 trapping period. A map of the entire area was gridded at one half mile intervals. The intersections of the grid lines were numbered consecutively and used to determine the mid-point of each trap line. Twenty of these points were selected randomly to determine trap line centers. The direction of the trap line was determined by randomly selecting an azimuth (at one degree intervals) from 0 to 360 degrees. From the center point 5 traps were placed along the selected azimuth in opposite directions from the mid-point. Trap intervals were 100 yards. In the event the trap line intersected the boundary and did not allow the setting of 10 traps, the line was considered complete with the number of traps that could be erected in the distance allowable.

In February 1964, 195 traps were erected on 20 randomly selected lines for June and September.

All traps were tied securely to the trees and flagging tape was used to mark trap sites. Prebaiting with pecans was conducted 5 weeks in advance of trapping. During June

trapping each trap was set twice on consecutive days. In September each trap was set once.

During both periods traps were set at 5:30 A. M. and run twice daily at 11:00 A. M. and 4:00 P. M. after which the trap doors were locked open to prevent squirrels from being caught and remaining in traps overnight. All squirrels were marked with one tag in each ear and a toe was clipped for permanent identification.

Findings: During the two trapping periods in 1964, June 2-12 and September 7-11 a total of 99 squirrels were marked and released. No animals died or were injured during the trapping period.

Trapping success again dropped for the second year in a row in 1964. However, this drop in trapping success was not indicative of the coming fall population as hunting success and total kill in 1964 was much greater than in 1963. Hunters in 1964 killed a total of 4419 squirrels compared to a total kill of 2396 squirrels in 1963.

Two hunting periods were granted in the Thistlethwaite Area during the 1964 season - one in October and another in November. Hunters returned 57 marked animals during the two hunting periods. Of the 57 animals marked, 18 killed in October and 3 in November were part of the 1964 sample. Another 13 squirrels returned in October and 2

in November were from animals marked in 1963. The remaining tag returns came from 1961 and 1962 sample remainders.

In computing the estimated population before hunts in 1964, percent hunter harvest in 1964 and natural mortality between 1963 and 1964 only October returns are used. A comparison of hunting success between the years 1963 and 1964 is also presented below. From this data collected the following has been determined:

1. $\frac{\text{99 Total marked animals 1964}}{\text{18 Oct. returns by hunters in 1964}} = \frac{x}{\text{3856 Oct. 1964 kill}} =$ 21,228 est. pop. before hunting in 1964.

2. $\frac{\text{3856 Total Oct. kill in 1964}}{\text{21228 Est. pop. before hunt}} =$ 18% of pop. removed by hunters in October 1964.

3. 21228-6440 Remaining after hunt in 1963=14788 population increase from end of hunting 1963 until beginning of season 1964.

4. 21228-(3856 October kill+563 Nov. kill)=17809 remaining in population after hunting in 1964

5. $\frac{\text{13 No. sq. killed in 1964 tagged in 1963}}{x} = \frac{\text{18 tagged in 1964 killed in1964}}{99} =$

   72 no. 1963 tagged squirrels still alive at beginning of hunt in 1964

6. 121 alive after 1963 hunt(det. from previous year report)- 72 alive at beginning of hunt in 1964 = 49 tagged 1963 animals lost because of natural mortality.

Therefore $\frac{49}{121}$ = 40.5% natural mortality that occurred from remaining 1963 sample between the end of hunting in 1963 and beginning of season in 1964.

7. Comparison of Hunter Success

		No. Hunters	Total Squirrels Killed	Av. Kill Per Hunting Effort
1963 -	Oct.	1338	2142	1.6
	Nov.	236	266	1.1
1964 -	Oct.	1826	3856	2.1
	Nov.	342	563	1.6

Prepared by:
J. B. Kidd
District Supervisor

Approved by:
Robert E. Murry
Project Leader

Date____________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN VIII

TURKEY STUDY

State of: Louisiana

Project No. W-29R-12 Name: Statewide Wildlife Investigations

Job No. 1 Title: A Comparison of Stocking Success

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Turkey sign was found on the Red Dirt G.M.A. Seven adult turkey hens and two yearling toms imported from Florida were released on the Bodcau G.M.A. A brood of unknown size was confirmed on Bodcau G.M.A.

Recommendations: Since the poor showing made by the Red Dirt birds is thought to be due to the quality of the birds stocked to the area, it is recommended that steps be taken to demonstrate the validity of this belief. If our original appraisal of Red Dirt as turkey habitat is correct native wild trapped birds should be able to produce an annual surplus for trapping and/or hunting. In the event the present stocking doesn't make a considerable gain during the 1965 breeding season the area should be stocked to wild trapped Louisiana birds prior to the 1966 breeding season. The study should be continued until the evaluation

of the Bodcau release can be completed.

Procedure: The Study Leader made one field inspection trip to the Bodcau G.M.A. release site and two inspection trips over portions of the occupied range on the Red Dirt G.M.A.

Nine birds imported from Florida were released on Bodcau in February. This release was composed of seven adult hens and two yearling toms.

Sight records were solicited from personnel working on each area.

Findings: Some turkey sign was found on each inspection of Red Dirt. The inspections plus the questioning of area personnel has convinced the writer that there has been no population gain during the past year.

On Bodcau the writer was shown fresh turkey tracks and droppings. Some birds from the original releases (8 hens, 1 hen, and 2 hens from Southeast Louisiana and 3 toms from Northeast Louisiana) had established ranges prior to the February 1965 release of Florida birds.

During spring gobbling census the district supervisor witnessed the mating of a mature tom with a hen presumed to be from the Florida turkey release. During June of 1965 the Development Project Leader observed several young poults accompanied by a hen.

Conclusion: The Red Dirt release has failed to prosper. The Bodcau release has not been completed long enough for full evaluation.

Prepared by:
Robert E. Murry
Development Project Leader

Date______________________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN VIII

TURKEY STUDY

State of: Louisiana

Project No: W-29R-12 Name: Statewide Wildlife Investigations

Job No: 2 Title: Productivity of Wild Turkey in Morehouse and Union Parishes

Period Covered: July 1, 1964 through June 30, 1965

Abstract: An analysis of data collected during the 1964-65 project year showed 409 wild turkeys and 81 poults were recorded. Only 9 different broods of young wild turkeys were observed. Of this number seven were accompanied by single hens and two multiple hens.

Sufficient data was not obtained to draw any conclusions other than generalizations. Only observations by technical personnel should be considered. Sight records should be limited to poult age estimates up to 4 weeks of age until a more feasible aging technique is available.

Of the 9 broods observed, 4 were aged at between 2 and 4 weeks of age. Average brood size was 9.0 poults per brood (Table I). Probable hatching dates range from May 10-28, 1965. One interesting observation noticed is the commencing of spring breeding activity. This occurred between March 16 and 30 for the years 1964 and

1965 respectively.

Evidence indicates that second nesting attempts may be more frequent than previously thought. Brood Reports and one active nest located in August help verify this.

Recommendations: It is recommended that this job be continued through the 1965-66 project year. Then, data obtained during the three year project period should be combined and evaluated.

Objectives: The objectives of this job were to determine hatching dates, nesting success, poult survival, average brood sizes and hen-poult ratios for the wild turkey in parts of Morehouse and Union Parishes.

Techniques: Field observations were made once each week or as the work schedule permitted. Data was recorded and sightings were made by District II technical and non-technical personnel. Broods were aged according to information and illustrations provided in "Game Research in Ohio", Vol. 1, 1962.

Findings: The objectives were carried out, as close as possible, to the techniques outlined for this job. The need for full time turkey project personnel is evident.

So far, sufficient brood records have not been obtained and aging refined enough to furnish basis for any job conconclusion. A comparison of data for the years 1963-66 should provide more substantial information than is available at present.

Due to fallacies in the aging technique employed, only observations by technical personnel should be considered. These observations should be limited to poult age estimates up to 4 weeks of age until a more feasible field technique is proven for older age classes.

From July 1, 1964, through June 30, 1965, a total of 409 wild turkeys and 81 poults were observed; 81 individual sightings were recorded. Observations were made by technical and non-technical personnel.

Of 349 birds seen during the late winter period, hens averaged $15.6^{(11)}$ birds per flock, gobblers $6.4^{(21)}$ and unknown birds $21.5^{(2)}$. An average of all birds sighted was $10.3^{(34)}$ birds per flock.

Only nine broods totaling 81 poults were seen (Table I). Seven were accompanied by single hens and averaged 8.4 poults per hen. Two multiple hen broods averaged 11.0 poults per brood but only 2.4 poults per hen. On one sighting 2 adult gobblers were in the immediate area occupied by 6 hens and 3 poults.

Between May 24-June 29, 1965 six single hens and 6 groups, totaling 17 hens, were seen. Groups ranged from 2-4 birds each.

During the same period only 16 gobblers were observed. One was a single and the rest constituted 5 groups of 2-4 birds each.

Gobblers were observed accompanying hens between May 24-June 1 only. Two sightings were recorded; 1 pair and 1 group of 2 gobblers and 1 hen.

During late winter of 1964, hens were not observed in the presence of gobblers prior to March 30. On March 31, 1965, one flock of 1 gobbler and 4 hens was sighted. In 1965, the first mixed groups were sighted on March 16. These groups consisted of 1 pair and 1 group of 2 gobblers plus 1 hen.

Findings: The findings of this job can be summarized in generalizations. Single hen broods averaged 8.4 poults, multiple hen broods 11.0 poults and all broods averaged 9.0 poults. Multiple hen broods averaged only 2.4 poults per hen. When all broods are considered, the hen poult ratio is 1:5.1

Broodless single and multiple hen groups occurred frequently and second nesting attempts are believed to be more frequent than previously thought. Gobblers were seen accompanying hens as late as June 1, 1965. Reports of two broods (very young) were received from local residents in late July, 1965.

One late nesting attempt was verified in Union Parish as late as August 8, 1965. This second nesting effort comprised 7 eggs which were removed by parties unknown.

This job should be continued through 1966 and terminated. At this time some conclusion should be drawn for the years 1963-66.

Prepared by:
Clifford T. Williams
District Supervisor

Approved by:
Robert E. Murry
Project Leader

Date________________

TABLE I

WILD TURKEY POULTS OBSERVED ON GEORGIA PACIFIC WILDLIFE MANAGEMENT AREA

Date	Poults, single Hen Broods	Poults, Multiple Hen Broods	Est. Poult Age	Hatch Approx. Date
7/23/64	1/5		7 weeks	6/5/64
5/31/65	1/9		2 weeks	5/18/65
5/31/65	1/8		--	--
5/31/65	1/10		--	--
6/1/65	1/9		--	--
6/6/65	1/8		4 weeks	5/10/65
6/19/65	-	3/19	--	--
6/21/65	1/10		--	--
*7/1/65	-	6/3	4-5 weeks	5/28 - 6/4/65

Hen/poult ratios: Single hen brood -- 1 hen/8.4 poults
Multiple hen brood -- av. 11.0 poults/brood and 1 hen/2.4 poults
All broods -- 9.0 poults/brood and 1 hen/5.1 poults

* Two adults - gobblers -- observed very close to this multiple hen brood.

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN IX

SPECIAL STUDIES

State of Louisiana

Project No. W-29R-12 Name Statewide Wildlife Investigations

Job No. 5 Title Effects of Administration of Tranquilizers

Period Covered: July 1, 1964 through June 30, 1965

Abstract: A total of 128 deer were captured and handled using orally administered Tranimul. Fifty-seven of these deer were semi-domesticated fallow and sika deer from a private estate. Testing of the drug Tranimul was primarily aimed at the refinement of administration and handling techniques. Two black bear were treated and their reactions recorded. Rabbits were captured readily at baiting locations established for other species. An attempt at capturing wild Canada geese was made, but was unsuccessful. One wild turkey gobbler and one domestic turkey were treated and their actions recorded.

Preliminary investigation was started to determine administration techniques and dosage rates for the use of the oral tranquilizer Tranimul, in the propogation of game birds.

Recommendations: Extensive field testing has shown that the oral tranquilizer, Tranimul, can be successfully used in capturing and handling various species of wildlife. Field techniques for the admin-

istration of this drug have been developed to the point that we can now be highly confident of its application to wildlife management. Further testing should be done to determine if Tranimul is a suitable tranquilizing compound for other common species of wildlife.

Since the results obtained in administering this tranquilizer to birds have not proven as successful as we had anticipated, it is recommended that additional testing be done with birds to determine effective dosage rates and perfect methods of administration. Apparently the method of administration has been a very weak link in tranquilizing techniques for birds.

Any new tranquilizing agents that become available which demonstrate desirable characteristics for capturing and handling wildlife should also be tested.

jectives: To test and evaluate the use of tranquilizing agents in the capture and handling of various species of wildlife. Various species of wild and domestic animals will be used to evaluate dosage rates, duration of action, and the practical applications of tranquilizing techniques to game management.

chniques
ed: All animals treated during the course of this segment of the study received the tranquilizing agent by oral administration. Deer trapping operations were conducted using bait material that was the most successful for the individual situation.

Deer handled at Sam Houston State Park were captured

by using Tranimul sprinkled on small pieces of apple.

Deer handled at Pally Lawton's received the drug mixed with a commercial brand of live stock feed.

All other attempts to capture deer were made using whole yellow corn as the bait material. The tranquilizing agent was made to adhere to the grains of corn by mixing it with a tacky mixture of laundry starch and gradually pouring untreated corn into the mixing container and stirring slowly until the corn was covered with a thin even coating.

Black bear were tranquilized by offering Tranimul mixed with honey spread on a hamburger bun.

Canada geese were treated with corn treated in the same manner as it was for deer trapping operations; however, the dosage rate was considerably higher. Corn treated at the same rate was also used in the attempt to tranquilize turkeys.

Dosage rates varied according to trapping localities, species being trapped, and the territory of the bait material.

Deer treated at Hodges Gardens and Gum Cove received shelled yellow corn treated at the rate of three grams of active tranquilizer material per quart of corn. The treatment level was reduced to two and one half grams per quart of corn for the last effort at Gum Cove. At Pally Lawton's and Sam Houston State Park and attempt was made to get deer to consume from one to three grams per ani-

mal.

One of the most important factors in attempting to capture any wild animal with a tranquilizer administered in bait is the establishment of a regular pre-baiting program. It is an absolute necessity that animals learn to regularly visit these bait locations and begin to use them regularly before any attempt to capture them is made. At such time as the regular bait is replaced with treated bait every attempt should be made to maintain the same schedule as was followed during the time of pre-baiting. Any unusual activity or deviation from the normal routine can result in a total failure of the tranquilizing attempt. An effort should also be made to distribute baiting stations as widely as possible. This would prevent dominant animals from receiving excessive amounts of the treated bait and bring about a more even distribution of the treated material among the animals using the area. Sufficient time should be allowed for the drug to take effect after the treated bait has been distributed to the baiting stations. In case of deer, this time lapse should probably be from four to six hours after treated material has been placed at the baiting station.

Preliminary investigation has revealed that birds normally require a heavier dosage to bring about the desired results

than do mammals. It is apparently more important to have a homogeneous distribution of the tranquilizing agent within the treated bait, as birds seem to have the ability to avoid treated particles of food. Extreme care should be taken when mixing treated bait for birds so as to insure the proper distribution of the tranquilizing agent.

Findings: A total of 128 deer was captured with orally administered tranquilizer during the period covered by this report. Nineteen deer from Sam Houston State Park were captured using pieces of apple sprinkled with Tranimul. Some of the deer captured had apparently received heavy doses of the drug, while some did not receive enough for optimum reaction. This can possibly be explained by the fact that the more mature, agressive animals fight the others away from the bait troughs and consume more of the drug than is needed for the desired reaction. By having numerous small feed troughs scattered throughout the enclosure, this situation can be nearly eliminated. These deer were captured in order to secure blood samples for the current anaplasmosis study by the Southeastern Cooperative Wildlife Disease Study.

An additonal 6 deer were captured and handled at Pally Lawton's field near Sulphur, Louisiana. These deer were also captured in order to secure blood samples for the anaplasmosis

study. At this operation Tranimul and regular live stock feed were mixed and placed in feed troughs. There apparently was no difficulty in achieving optimum tranquilization in this herd.

One of the more interesting applications of this new technique of capturing deer occurred at Hodges Garden south of Many, Louisiana. A semi-domestic herd of fallow and sika deer range freely within a 5,000 acre enclosure. At the request of the land owner, surplus deer were trapped with orally administered tranquilizer. Shelled corn with three grams of Tranimul per quart of corn was used as bait. Although the area was pre-baited adequately, and many small bait troughs were deposited throughout the feed area, the dominance of the highly agressive, adult males caused the sex ratio of the captured deer to run heavily toward bucks. This condition indicates that many feeding opportunities should be offered during the pre-baiting period, just the same as when the treated bait is distributed.

Four attempts to take deer in this locality resulted in the capture of 57 fallow and sika deer. Several other deer were known to have been captured on more than one occasion, but could not be moved due to the wishes of the land owner.

Two attempts to capture deer were made in Madison Parish. Eight adult does and one juvenile male were captured during the first attempt. Poor feeding conditions, including 22 degree F. temperature and 15-20 miles per hour winds, are blamed for the low catch here. They apparently just did not come into the fields to the bait stations to feed due to the adverse weather conditions.

The second attempt in this locality resultedin a total failure. This was brought about by harassment of the deer by free ranging dogs on the night of the capture attempt. The dogs captured, killed, and partially ate at least one animal during this operation.

Two attempts were made to capture deer in the heavily wooded areas on the Tensas Parish portion of Chicago Mills Game Management Area. The heavy cover enables the drugged deer to escape notice even after he can no longer make coordinated movements. Areas such as this will probably never be as productive as in more open situations. Three grams of Tranimul per quart of corn was used here.

37 deer were captured at Gum Cove with Tranimul. 24 of these deer were used for restocking; 6 went to a research project in Texas; and 4 were released at the capture site. 25 of these deer were captured in conventional manner by treating

and waiting 2-3 hours before attempting to pick up the animals. The bait in this case was corn treated at the rate of three grams per quart. The last twelve animals were captured by putting out corn treated at the rate of 2½ grams per quart and waiting 7 hours before entering the field. Fewer personnel were used in this operation. It is interesting to note that 10 quarts of corn were missing from the 24 quarts of treated material used.

During the past year, Commission personnel have had several opportunites to use various tranquilizers on black bear; however, limited testing of Tranimul on black bear indicates that the slow action of this drug makes it undesirable to use in the capture and handling of bear. On one occasion the reaction of the drug caused the bear to climb out of the tree. The drug apparently made them walk unsteadily and they were easily roped. By the time they had been transported to a holding cage they were usually overcome by the effects of the drug.

On one occasion a black bear of approximately 150 pounds was treated with an estimated 5 grams of Tranimul mixed in honey and spread on a hamburger bun. This heavy dosaged failed to completely immobilize the bear although it slept when it was unaware of people around its cage.

During the deer capturing attempts at Gum Cove, deer catching nets were put over many rabbits. Several were hand caught and photographed. By using smaller mesh nets and pre-baiting of a good open rabbit site with an existing high population, one could probably capture as many rabbits as were needed. It should be pointed out that the capture of rabbits was incidental to the deer trapping operations. It is quite likely that by using a more suitable bait for rabbits than the material normally used to bait deer, a phenomenal catch could be effected.

An attempt at capturing wild Canada geese with a corn treated at the rate of 10 grams per quart, was made in Southwest Louisiana. Several birds, although apparently heavily drugged, recovered when the untreated birds disturbed them. Droopy birds were approached later in the day and one, or possibly two captures could have been made with a net. One redwinged blackbird was hand captured at the baiting site. He was sacrificed to find how much corn had been ingested. No corn was in the bird, although some starch and/or Tranimul was noted on the bird at the hinges of the beak. This was assumed to have come from attempts to break the corn into smaller pieces.

Corn treated at the rate of 10 grams per quart was administered to 7 adult male turkeys on the Georgia Pacific Game Management Area. Although these birds were traced for more than a mile following their treatment, their wariness did not seem to decrease. At least two were visibly incoodinated. A domestic turkey offered some of the treated corn was reported to show some symptoms for 72 hours following treatment.

It has been noticed since the beginning of this study that birds apparently have the ability to effect almost complete recovery from obvious symptoms of incoordination not subject to stress. It is quite possible that this innate ability will prevent us from ever achieving the degree of success in capturing and handling birds that we have experienced with mammals.

A preliminary study to evaluate the use of Tranimul in the propagation of game birds has been initiated. Since all of the data concerning this phase of the investigation has not been gathered at this time, no report will be submitted concerning this part of the job for the purpose of this report. A complete report will be submitted at a later date, as soon as all of the data is gathered.

Prepared by:
Dan Dennett
Deer Study Leader

Approved by:
Robert E. Murry
Project Leader

Date______________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN IX

SPECIAL STUDIES

State of Louisiana

Project No. W-29R-12 Name Statewide Wildlife Investigations

Job No. 12 Title Field Testing Methods Used to Prevent Crop Damage by Deer

Period Covered: July 1, 1964 to June 30, 1965

Abstract: Booby trap devices were not tested because of the failure to receive legislative approval for the type of explosives needed in the construction of the booby traps. One new type of liquid deer repellent was tested on an experimental watermelon patch and found to be ineffective in repelling deer. The repellent tested is known by the trade name of Magic Circle Deer Repellent.

Recommendations: The primary aim of this job was to test and perfect booby trap devices for the prevention of crop damage by deer. Since it has been found that the use and possession of explosives of the type needed for booby trap construction is prohibited by state law, it is recommended that this investigation be terminated. This study was initiated with the understanding that subsequent legislative action would enable commission personnel to legally use explosives of the

type required for booby traps. Such legislation never became a reality and thus prevented the continuance of this study.

Objectives: To determine the effectiveness of booby trap devices in preventing crop damage by deer or other wildlife. To test selected new liquid repellents that showed promise of providing an economical method of preventing deer to damage to crops.

Techniques Used: No booby trap explosive devices were used during the period covered by this report. The construction and method of use of this device is fully described in a previous report. These booby traps are patterned after those described by Flyger (1961).

Liquid repellent was used on a one (1) acre watermelon field that was purposely planted in an area having a high deer population in order that the effectiveness of the repellent could be evaluated. The compound tested is known as "Magic Circle" deer repellent made by Nasco, Inc., of Ft. Atkinson, Wisconsin. This repellent was applied according to the directions given by the manufacturer. Directions call for mixing the compound with water at a rate 1 part repellent to 100 parts of water. This mixture was applied to plants around the edge of the field in a swath approximately 8-10 feet wide. This was done prior to the time deer started using the field. The directions advise against spraying the mixture on plants in the early seedling stage.

Findings: The problem of preventing crop damage by deer has no easy solution. This study was initiated to attempt to find an economical method of preventing or at least reducing deer damage to crops. The results of the test of "Magic Circle" deer repellent indicate that this compound does not give the desired amount of protection, at least under the field conditions that it was tested in. Possibly stronger rates of application would give prolonged protection from deer damage. One of the objectionable factors of the liquid type repellents tested is the high cost of the compound. The cost of "Magic Circle" is $7.75 per gallon. For the farmer who has to treat large acreages or make repeated treatments this cost would be prohibitive.

Although the test area was treated according to the manufacturer's direction, deer still came into the watermelon field and inflicted damage. After this, scattered plots throughout the field were sprayed and deer damage was still observed. There was, however, a noticeable reduction in the number of rabbits using the test area.

Booby traps were not tested due to the failure to obtain legislative action that would legalize the use of the type of explosives necessary for their manufacture.

Prepared by: Dan Dennett, Jr. Deer Study Leader	Approved by: Robert E. Murry Project Leader

Date________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN IX

SPECIAL STUDIES

State of Louisiana

Project No. W-29R-12 Name Statewide Wildlife Investigations

Job No. 13 Title: An Investigation of Some Factors Affecting Waterfowl Habitat on Catahoula Lake

Period Covered July 1, 1964 through June 30, 1965

The findings of this study was used for a thesis submitted to the Graduate School, Louisiana State University, Baton Rouge, Louisiana. Attached is an abstract of the study; the final report will be forthcoming.

Prepared by:
Dewey W. Wills
Supervisor
District IV

Approved by:
Robert E. Murry
Project Leader

Abstract: A study was conducted on Catahoula Lake to determine (1) herbaceous ground cover, (2) forage production and utilization, (3) chufa production and utilization, (4) lead shot deposition and lead poisoning, (5) physical and chemical properties of the soil and chemical properties of the soil and (6) water quality.

Five transects were run across Catahoula Lake and herbaceous ground cover was determined in 1963. A total of 144 clipping samples were collected in 1962 and again in 1963 to determine forage production and utilization. Sprangletop (Leptochloa facicularis), teal grass (Eragrostis hypnoides), wild millet (Echinochloa sp.) and chufa (Cyperus esculentus) were the major forage species produced on the lake.

A total of 144 ground samples were taken in 1962 and another 144 samples in 1963 to determine chufa tuber production and utilization. It was determined that 1,183.2 pounds of chufa tubers were produced per acre in 1963 and that 430 pounds per acre were utilized. In 1963, 2,486.0 pounds were produced per acre, while 914.0 pounds of tubers were utilized.

In the summer of 1963, 213 bottom samples were taken from Catahoula Lake and examined for lead shot. Twelve pellets were recovered and when projected to a unit basis gave 6.19 pellets per square yard or 29,964 pellets per acre on the lake bottom.

During a lead poisoning outbreak on the lake in February-March 1964, 83 sick mallards and 24 sick pintails were picked up for examination. The number of pellets found per bird ranged from 0 to 21. Thirteen per cent of these birds had no pellets in their digestive systems: 45 per cent had 1 to 3; 37 per cent had 4 to 10; and 4 per cent had more than 10. Mallards and pintails were the primary species affected. Mallards were more susceptible than pintails for there was 1.2 times more pintails than mallards on the lake, yet there were 2.7 times more sick mallards. Feeding characteristics of the two species were responsible for this difference.

Physical and chemical properties of the soil were determined during 1963. Plant nutrient values presented in this study were for general soil type since nutrient requirements of vegetation growing on Catahoula Lake are unknown.

Water samples were collected monthly for June 1964 to June 1965 for water quality analyses. Most factors fell within expected ranges for fresh water streams. The chlorides were very high due to oil field brine discharge. Color was slightly high and the water excessively hard.

Prepared by:	Approved by:
Dewey W. Wills Supervisor District IV	Robert E. Murry Project Leader

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
WORK PLAN X
BEAR INVESTIGATIONS

State of Louisiana

Project No: W-29R-12 Name: State Wildlife Investigations

Job No. 1 Title: Inventory of Bear in Louisiana

Period Covered: July 1, 1964 through June 30, 1965

Abstract: One bear range survey was made in conjunction with a deer range survey.

Recommendations: It is recommended to continue this job as it is. It is further recommended that these surveys be made in conjunction with the deer range surveys.

Objective: To learn as much as possible regarding the various bear ranges in the state and the animals that occupy them. To compile a record of locations and number of bear for future management.

Techniques Used: The surveys are made by the investigator going into the area, and as he traveled (by boat or vehicle), making stops and walking to gather the necessary information. Stops were made as often as deemed necessary by the investigator. At each stop notes were made as to bear sighted or sign such as tracks, droppings, or clawing or scratchings on logs or trees. Local people were contacted to get any additional

information needed. A narrative report is being prepared on the area surveyed. The report will contain all pertinent information gathered.

In August and September, 1964, a bear release was made of 28 animals obtained by trapping in the State of Minnesota. The operation was financed by state funds. The release was made in the Atchafalaya River swamp, in Pointe Coupee Parish. Each bear was tagged in each ear with a monel tag.

Numerous reports of bear being seen and damage complaints throughout the state were investigated. Reports of bear being killed by automobiles or shot were investigated. Some bear showing up around peoples houses, especially in towns, were caught and returned to the original release site. Some of these bear were caught with ropes and tied, some were caught with ropes and put in a hauling crate, and some were caught by use of the Cap-chur gun and sucostrin.

Findings: A report is forthcoming on a survey made in Assumption, St. Mary, and Terrebonne Parishes. This survey was made in conjunction with a deer range survey.

Of the total number of bear released 18 were males and 10 were females. Seven of the total were cubs.

Since the bear were released 14 animals have been verified as being killed. Twelve of these were ear tagged. One of those not tagged was killed in an area where there are native

bear. Of those killed ten were shot, three were hit by automobiles, and one died of an overdose of sucostrin. Four of the bear were killed in Mississippi. One of these was killed approximately 260 air miles from the release point.

Twelve bear were caught and taken back to the original release point.

It is not known as to the number of complaints investigated where reported bear were being a nuisance.

Presence of bear being in some areas throughout the state as reported by citizens were verified by tracks. Numerous reports were received that on investigation proved false. The people making the reports of bear tracks did not know bear sign.

Prepared by:
Louis E. Brunett
Deer Study Leader

Approved by:
Robert E. Murry
Project Leader

Date:____________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN XI

EXOTIC BIRD STUDY

State of Louisiana

Project No.: W-29R-12 Name State Wildlife Investigations

Job No.: 1 Title Survival and Reproduction Studies of the Cove Black Francolin Release -

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Black francolin (Francolinus francolinus asiae) prebaiting and trapping is more effective under dense cover. Late February yielded the best catch of francolins. An elongated funnel type trap seems to be best suited for francolin trapping. Brightly colored plastic neckties proved to be superior marking agents. Early morning was found to be the best time for conducting a black francolin census. Calling males were first heard on March 10 and increased through April. Two nests were located in June, 1965. Two broods have been confirmed in 1965. The total population is thought to be higher than ever.

Recommendations: Continued emphasis should be placed upon studying the ecology of the black francolin in Louisiana, including trapping and marking. A large scale trapping effort should be made this winter for stocking one or two selected areas in the state.

Objectives: The objective was to provide an accurate chronicle of the status of the black francolin (_Francolinus francolinus asiae_) in the vicinity of Gum Cove, Louisiana.

Techniques Used: Much of our information came from direct observations made by project personnel on the area. A graduate student spent some time on the release area during the winter and spring testing and developing a trapping method. This method was a bait trapping one and consisted of prebaiting numerous coverts with "hen-scratch"- a mixture of wheat, milo and cracked corn. The actual prebaiting was begun in January and the trapping was conducted during February, March, and early April, 1965. Two types of traps made from 1" x 2" weldwire were tested. One was 24" x 36" x 12" high and had two 6" x 6" funnel type entrances-each placed on opposite sides and near opposing ends of the trap. The other type trap was 12" x 32" x 12" high with an 8" x 10" high drop-door on each end which was activated by a mouse trap trigger mechanism. Bait was placed near the middle of the trap in both types.

One other trapping method was tested some last summer. This was the drift fence method. Three 150 foot rolls of 2-inch mesh, 36" poultry wire were staked out (3 separate locations) in a zig-zag fashion with a trap at each apex. An opening was cut at the apex in the poultry wire and a trap was hog-ringed

to the cut wire ends. In effect, a trap was placed every 20 to 30 feet. Traps used were of the double drop door type. The thinking was that a walking francolin would intercept the drift fence and would follow the fence to an apex and enter the trap rather than fly over the fence.

Marking techniques consisted of placing brightly colored plastic neckties and wing streamers on trapped francolins.

A trial black francolin census was set up and run at three different times during the day to determine the time of maximum calling. In this way the best time for censusing black francolins, using the call-count method, could be learned. After the above had been ascertained, call-count routes were set up and the routes were run as many times as possible during April, May and June. A call-count route consisted of a number of three-minute listening stops at one mile intervals. All pertinent data were recorded. The number of francolins calling, the number of calls, plus the number of birds seen sums up the data recorded at each stop.

A graduate student spent the entire month of June, 1965, at the Gum Cove release area making observations on the behavior of individuals in the francolin community and running call-counts.

Findings: Trapping At the onset of prebaiting for francolin trapping, numerous other birds (predominately blackbirds) began using the bait, therefore baiting techniques had to be modified. In the beginning, bait was placed in small piles in the open with little or no surrounding cover. This was modified and placed under dense cover where other birds normally did not venture but still was attractive to francolins. Although rabbits and other mammals consumed some of the bait at night, this method was satisfactory.

Approximately thirty traps were set beginning on February 6, 1965.

Listed below are the trapping dates and the results of the operation.

Date	Francolins Trapped New	Francolins Trapped Retraps	Disposition
Feb. 6-7	3	-	Released at trap
Feb. 13-14	5	0	Released at trap
Feb. 20-21	9	6	Released at trap
Mar. 13-14	5	2	5 New birds to L.S.U. Study
Apr. 3-4	3	0	3 New birds to L.S.U. Study
Apr. 8-9	2	0	2 New birds to L.S.U. Study
Apr. 10-11	2	0	2 New birds to L.S. U. Study
Total	29	8	

Of the 29 birds trapped, only one carried a leg band- a female which was released in 1961. This bird was at least five years old.

The elongated trigger type trap proved to be effective in trapping francolins but it presented problems in setting the trigger mechanism with the trap in place. The funnel type trap caught francolins but was too bulky in construction and design. Therefore, it is felt that an elongated trap with a funnel on each end will prove to be the most satisfactory for black francolin trapping at Gum Cove.

The drift fence trapping test yielded no francolins but it did capture a number of rabbits, an armadillo, an o'possum, and one King rail. From this limited test it appeared that the drift fence would catch francolins but the time, labor and expense of setting up enough fence for large scale francolin trapping would make it prohibitive. However, this method may have some merit in the development of brood trapping techniques.

Marking A total of seventeen wild trapped black francolins was marked with either plastic neckties or wing streamers. It was determined from subsequent observations of some of these marked birds that the neckties were observed more readily and positively than were the wing streamers. The neckties could be identified while the bird was in any perched position, in flight, or in grass while the wing streamers could be seen when

the bird was in only certain positions.

Marked males were observed in the company of unmarked females and vice-versa so it was assumed that the brightly colored plastic markers had no adverse effect on courtship.

Censusing It was found that francolin calling was more frequently heard during the early morning hours (5-7 A.M.) than later in the day. Also, more individual birds were heard on the test route. The test route consisted of eleven stops. During two early morning runs a total of 20 birds called 161 times averaging .*91 birds and 8.0 calls per 3-minute stop* while only 8 birds called 57 times on the two late runs *averaging .36 birds and 7.1 calls* per stop. Therefore it was determined from this limited test that early morning was the best time to census black francolins using the call-count method.

Graduate student Billy Craft ran a number of call-counts on one specific route. Pertinent data follows:

Date	Time	Birds Seen Male	Birds Seen Female	Calling Males Heard
4-24-65	6:04-7:20 A.M.	5	1	10
5-15-65	5:30-6:50 A.M.	7	0	10
5-16-65	6:30-8:10 A.M.	2	1	9
6-1-65	5:40-8:00 A.M.	3	1	10
6-10-65	6:25-7:35 A.M.	4	1	10
6-17-65	6:58-8:25 A.M.	1	1	4
6-21-65	5:55-7:15 A.M.	3	1	8
	Totals	25	6	61

Average - .79 calling males per 3-minute stop.

Black francolins(males) were heard calling as late as September 23, 1964, and the first one heard calling in the Spring was on March 10, 1965. Calling was sporadic during March possibly due to changing weather conditions. From about April 15th on, calling males were common on the release area and within a five mile radius of the release site. One brood of seven chicks and another of two chicks has been confirmed this year. Two nests were located the last week of June. One of the nests was destroyed and the hen was found dead near it. The other nest contained six eggs and was still being incubated

on June 30. The total population is thought to be the highest it has ever been and with a continued favorable breeding season the outlook is good.

Prepared by: Approved by:

Raymond J. Palermo
Exotic Bird Study Leader

Robert E. Murry
Project Leader

Date__________________

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN XI

EXOTIC BIRD STUDY

State of Louisiana

Project No.: W-29R-12 Name Statewide Wildlife Investigations

Job No.: 2 Title Survival and Reproduction Studies of the Oak Ridge Black Francolin Release

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Black Francolin (Francolinus francolinus asiae) call counts resulted in a low of 0 and a high of 7 calling males. A calling peak occurred in late August, 1964. The number of calling males was rather low in 1965. Habitat deterioration is believed to be the main factor in an apparent population decline. Decoy and bait trapping attempts yielded no birds.

Recommendations: The established call-count route should be run as many times as possible during the next year. Frequent trips to the release area should be made by District and Project personnel in an effort to properly evaluate the status of the Oak Ridge francolin release and to observe and determine the reasons for the apparent population decline.

Objective: To provide an accurate chronicle of the status of the black francolin (Francolinus francolinus asiae) in the vicinity of Oak Ridge, Louisiana.

Techniques Used: Much of our information came from direct observations made by district and project personnel on the area. A graduate student experimented with some trapping techniques and furnished some of the observational findings.

Early morning call-counts were made on the release area by a graduate student. This route consisted of seventeen 3-minute stops at one mile intervals on the release area. The route was run a number of times during the period of this report. All runs were begun at 30 minutes before sunrise.

The trapping methods tried were live decoy trapping and bait trapping. The decoy technique consisted of placing a live black francolin male in a weldwire cage which was within a larger funnel type trap. It was hoped that the decoy would call and lure francolins (male or female) into the funnel trap.

Some bait trapping was attempted using soybeans, corn chops, and "henscratch" mixed with "Purina Growena" for bait. Traps used were elongated weld wire cages with a drop door on each end. The doors were activated by a trip wire (monofilament) mechanism and gravity pull.

Findings: Censusing: The established call-count route was run a total of 28 times between July 1, 1964 and June 30, 1965. Some calling francolin males were heard on most of the runs and varied between a low of 0 and a high of 7 calling birds. Fig. 1 shows

the results of each call-count census. A peak of calling males occurred during late August. From this limited data this may indicate a secondary nesting peak. The graph also shows that the number of calling males heard during the 1965 was rather low which may indicate a decline in the breeding population on the release area. This data coupled with a low number of francolin observations by project personnel as well as by local people indicate a decline in population. Continued fence row cleaning and stepped up clean cultivation has led project personnel to believe this is one reason for a population decline on the release area. Reports of killing francolins while quail hunting have trickled in while this probably has a decimating effect on an existing low population the main factor is believed to be habitat deterioration.

Trapping: The decoy trapping method yielded no birds although it was placed in view of calling wild birds. The decoy used would not call and this may have been one reason for no response.

Some francolin use was observed on the "henscratch mixture" and the corn chops but not on the soybeans. However, a francolin was observed feeding on spilled soybeans on the release area. No francolins were trapped using the bait trap method.

Prepared by:	Approved by:
Raymond J. Palermo Exotic Bird Study Leader	Robert E. Murry Project Leader

Date:__________

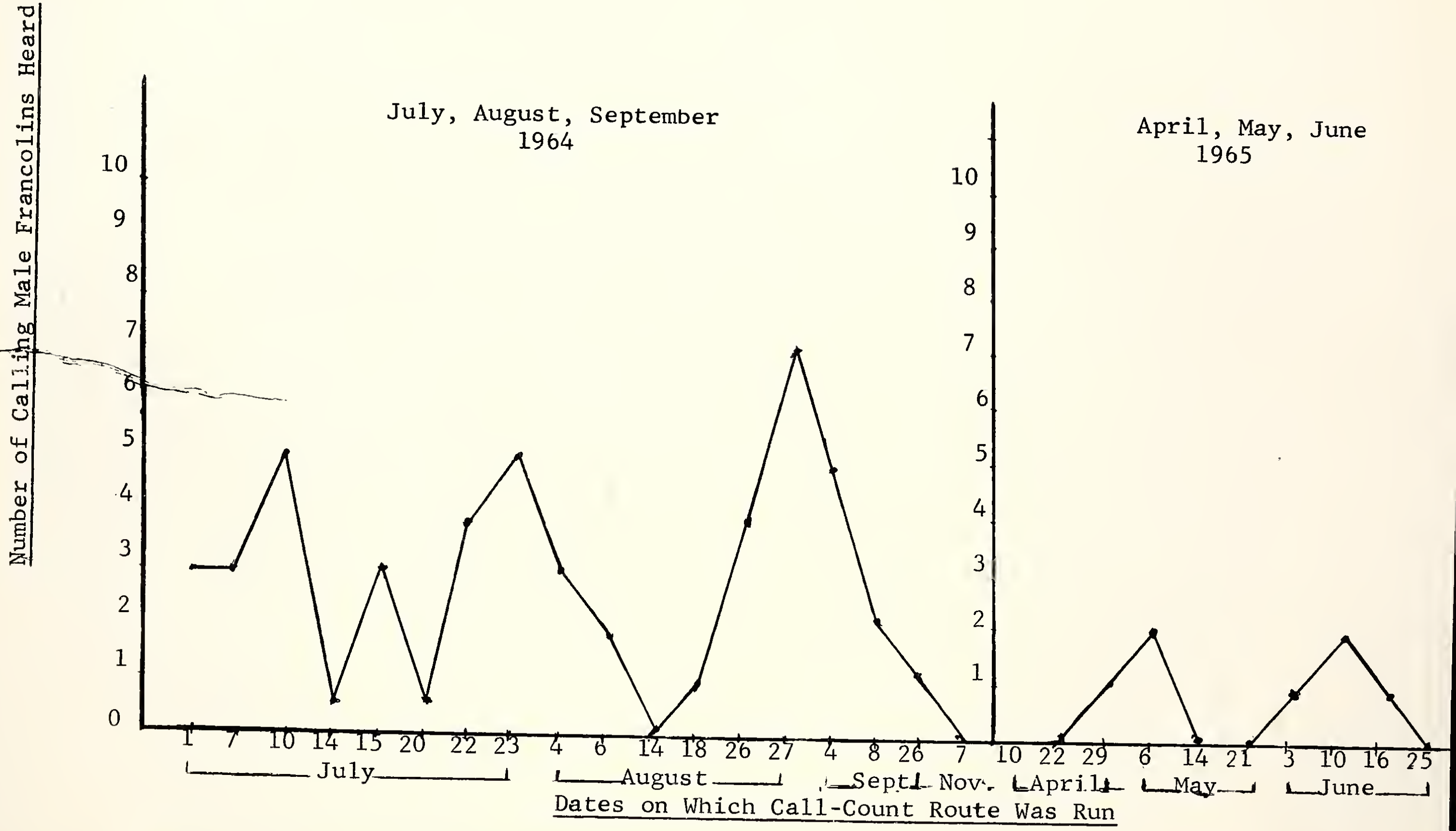

Fig. 1. Oak Ridge Black Francolin Call-counts.

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN XI

State of Louisiana

Projcet No.: W-29R-12 Name Statewide Wildlife Investigations

Job No.: Title Survival and Reproduction Studies on Red Junglefowl Releases in Louisiana

Period Covered: July 1, 1964 through June 30, 1965

Abstract: Junglefowl (Gallus gallus murghi) dispersal varied from three to nine miles on all areas after release. Crowing cocks were heard frequently on all areas in March, April, and May, but decreased in June. A total of five broods have been reported on the four release areas. Two broods consisted of four chicks, one had six, another had two, and one had atleast four and possibly five chicks. These broods varied from about one week to "half grown". No nests were reported from the four release areas.

Recommendations: In an attempt to properly evaluate the junglefowl releases, a standard census method should be designed. This should probably be the crowing cock census as males crow quite frequently March through May. This census could provide an index to existing population and rate of dispersal. It is recommended that future releases of junglefowl be made in the

same manner as 1964-65 with possibly more of the birds being released in late winter than in the fall.

Techniques Used: Four release sites were selected for red junglefowl (Gallus gallus murghi) in Louisiana. These were the West Bay Game Management Area, the Thistlethwaite Game Management Area, Idlewild Research Area, and a selected area in St. Helena Parish.

The West Bay G.M.A. is located on the west bank of the Calcasieu River in Allen Parish. The release point and surrounding area is predominately creek bottom hardwoods. The Thistlethwaite G.M.A. is located in St. Landry Parish near Opelousas. This timber type is of the bottomland hardwood variety and consists of essentially an even-aged stand of hardwoods (mostly oaks) which are approaching maturity. The Idlewild Research Area is located in East Feliciana Parish just south of Clinton. This area is in the loblolly pine-mixed hardwoods belt. A rather thick understory of various shrubs, vines, and briars prevail. The release area in St. Helena Parish may be considered as similiar to the Idlewild Area.

A 30' x 70' conditioning pen was constructed on each area, except the pen at Idlewild was 40' x 100'. These pens were constructed of 1" mesh poultry wire except the top of the West Bay pen was 2" mesh. A single strand electric wire was placed about 6" above ground level for predators. A hinged door was placed at each end of the pens.

Two feed shelters and two 5-gal. water containers were placed in each pen. Feed consisted of Purina F & M (flight and maintenance) and Purina henscratch. Commercial granite grit was also placed in the pens. Brush was cut and placed in the pens if the existing cover was felt to be insufficient.

Juvenile pen-reared junglefowl were placed in the pens in early Autumn. Seventy-six were placed in the West Bay pen, eighty on Thistlethwaite, fifty at Idlewild, and thirty in the St. Helena pen. They were held until November, 1964, when approximately one-third was released from each pen. The remaining two thirds were over-wintered and released the following March. The gentle release method was used. Feed and water was made available outside the pens for the released birds. Frequent visits to the pens and surrounding areas were made by District personnel. Much of the findings are based on observations made by District personnel and by a graduate student assistant who is making a complete study of released junglefowl in Louisiana.

Findings: West Bay G.M.A. During the two month period immediately after the final release in March, numerous birds were seen and heard crowing near the release pen. Birds gradually dispersed and by the middle of June no birds could be located within a two-mile radius of the release point. Occasionally a male could be heard crowing but it appeared that there was a wide dispersal.

Unconfirmed reports of junglefowl were reported up to nine miles of the release site. No nests or broods were reported.

Thistlethwaite G.M.A. Crowing males were heard frequently within a one-half mile of the release pen on Thistlethwaite G.M.A. and numerous birds were observed from March to June. A few junglefowl were observed through June but no nests or broods were reported. A short time after the final release in March, a flock of six to eight junglefowl was located approximately nine miles northwest of the release site. These birds were near farm houses with domestic chickens.

Idlewild Research Area Junglefowl remained near the conditioning pen at the Idlewild Area better than at the two above areas. This could have been due to it having more openings and therefore more "edge". Crowing males were heard and both males and females were seen frequently March through May. Crowing activity seemed to have lessened in June. Two broods have been confirmed on Idlewild. One brood consisting of at least four chicks was observed on May 19, 1965. This brood was found near the release pen. The observer estimated the chicks to be between one and two weeks old. On June 15, 1965, the same observer reported another brood one-half mile west of the release pen. This brood had four chicks which the observer stated was "half-grown and fully feathered except for patches along the back of the neck." He also mentioned that they were very alert,

wild, and flew readily. No junglefowl nests were reported. Dispersal extended to about a three mile radius.

St. Helena Release Released junglefowl remained in this release pen vicinity for some time after release. Dispersal through June extended to about a three mile radius, however, a number of birds were still within one-half mile of the release pen. A total of three broods have been reported from this release area. Broods consisted of six, four, and two chicks. Two of the broods were located within one-half mile of the release pen. No nests were reported.

Prepared by:
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Approved by:
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JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

WORK PLAN XI

EXOTIC BIRD STUDY

State of Louisiana

Project No.: W29R-12 Name Statewide Wildlife Investigations

Job No.: 4 Title Survival and Reproduction Studies of Any Additional Black Francolin or Various Pheasant Releases

Period Covered: July 1, 1964 through June 30, 1965

Abstract: An outbreak of gapeworms (Syngamus trachea) killed almost all the black francolins (Francolinus francolinus asiae) placed in the Melville, La., conditioning pen. A varmit, presumably a fox, gained entrance to the pen and killed a number of the few surviving birds.

Eighty-seven Japanese green pheasants (Phasianus colchicus robustipes) were released near Fenton, La. Observations indicated a two-mile dispersion. Crowing males were heard frequently in the Spring. One crowing count census resulted in four crowing calls heard and three pheasants observed.

Recommendations: The testing of pen-reared black francolins should be continued on a new release site. The present conditioning pen at Melville should be treated to eradicate the existing gapeworms and possibly be used as a holding pen for wild-trapped black francolin

if they become available.

The Japanese green pheasant release program at Fenton should be continued this year, with emphasis on a larger number of birds released. Standard crow-count routes should be set up in order to establish a base index to existing populations.

Objective: To consolidate and evaluate all information relative to the survival, reproduction, dispersal, and habitat preferences of any additional black francolin or various pheasant releases.

Techniques Used: A release site for pen-reared black francolins was selected in St. Landry Parish just north of Melville. This area consists of cultivated crops - mostly corn, cotton and soybeans. Pasture and idle weed fields are interspersed between row crops throughout the area. A 30' x 70' conditioning pen was constructed at the selected release point. The design of the pen was the same as described in job No. 3 of W-29R-12, Work Plan XI. One hundred 10 week old pen-reared black francolins were placed in the pen in early September, 1964.

One pheasant release was set up in Jefferson Davis Parish near Fenton. This area is in Louisiana's rice belt and consists of extensive rice fields, and fallow fields. Many fencerows, ditchbanks, and small wooded areas offer fairly good cover. A 50' x 150' conditioning pen was constructed using essentially the same design as the other pens (Job No. 3, W-29R-12, Work

Plan XI). Ninety-nine 9-10 week old Japanese Green Pheasants were placed in the pen in September and October, 1964. Approximately one-third was released in mid-January, 1965, and the remainder in early March, 1965. Much of the findings are based on observations made by District personnel after release of these birds. A pheasant crowing count route was set up and run once in accordance with the standard pheasant crow count method. However, numerous other crowing observations were made.

Findings: Black Francolin - A gapeworm infestation invaded the black francolin at Melville and killed practically all the birds in the pen. Of the few that survived the infestation, a predatory animal, assumed to be a fox, gained entrance to the pen by digging and killed several birds. It is possible that a very small number of birds might have escaped through the fox's entrance hole.

Japanese Green Pheasant - Eighty-seven pheasants of the original ninety-nine placed in the pen were released on the Fenton Area. The loss of twelve birds while in the pen was attributed to various injuries and not disease. Upon release, pheasants dispersed approximately one mile and subsequent observations indicated a two mile dispersion. Crowing pheasants were heard frequently and individual birds were quite frequent-

ly observed by district personnel and local farmers. No nests or broods had been reported through June 30. The one crowing count census conducted resulted in three pheasants observed and four crowing calls heard.

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